



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE (Case No. 00-505-B)

In re Ápplic	eation of:)
Prog	ulske-Fox)
3) Examiner: Not Assigned
Serial No.:	09/980,845)
) Group Art Unit: Not Assigned
Filed:	August 4, 2000)
	9) Conf. No. 3701
For: Micr	obial Polynucleotides Expressed)
	ng Infection of a Host)

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

PETITION TO WITHDRAW HOLDING OF ABANDONMENT UNDER 37 CFR §1.181(A)

This paper is filed in response to the notification of abandonment mailed in the above-mentioned application on March 3, 2006. Applicants respectfully request reconsideration of the holding of abandonment.

The notification of abandonment states that the Applicant failed to respond to the notification of missing requirements mailed February 28, 2002 within the time period set therein. See, Appendix A. Therefore, it appears that Office has abandoned the application based on a failure to reply within a set time period. See, MPEP §711.03(b). However, the Applicants clearly responded in a timely manner to the notification of missing requirements mailed on February 28, 2002. A response to the notice was filed on March 27, 2002 and a stamped postcard was received from the Office indicating that the response was indeed received. See, Appendix B. Additionally, the response was filed under the provisions of 37 CFR §1.8 by the undersigned. The undersigned states that the response was filed properly on March 27, 2002 under the requirements of 37 CFR §1.8. The response included the required declaration, a paper copy of the

sequence listing, a computer-readable form of the sequence listing, a statement under 37 CFR §1.821, and a fee. *See*, Appendix B. Therefore, the application cannot be abandoned for failure to timely respond to the notification of missing requirements of February 28, 2002.

On June 12, 2002 a notification of defective response was issued by the Office. See, Appendix C. The notification stated that the computer readable form filed with the application was found to be damaged and/or unreadable as evidenced by the attached CFR Problem Diskette Report. No CFR Problem Diskette Report was attached. The notification also stated that the computer readable form did not comply with the sequence listing requirements. A Raw Sequence Listing Error Report was attached to the notification. Applicants assumed that the computer readable form of the sequence listing was not damaged or defective since a Raw Sequence Listing Error Report was generated. A response was timely filed by the applicants on June 24, 2002 under the requirements of 37 CFR §1.8. The undersigned states that the response was filed properly on June 24, 2002 under the requirements of 37 CFR §1.8. A stamped postcard was received from the Office to evidence receipt. See, Appendix D. It was the undersigned's good faith belief that all errors listed in the raw sequence listing error report were corrected in the response of June 24, 2002. See, Appendix D.

Two and one half years later, on January 3, 2005, another notification of defective response was received from the Office. *See*, Appendix E. The notification stated that (1) the content of the computer readable form submitted on June 24, 2002 did not comply with the requirement of Annex C as indicated by the attached marked up copy of the "Raw Sequence Listing"; and (2) that the computer readable form was found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. However, no Raw Sequence Listing Error Report or Diskette Problem Report was attached to the notification.

On January 24, 2005 the undersigned requested the Raw Sequence Listing Error Report and/or Diskette Problem Report from Examiner Vonda Wallace via both phone and facsimile. *See,* Appendix F. No response was received from Examiner Wallace. Since no extensions of time were available to applicants, a response was filed on February 3, 2005 under the requirements of 37 CFR §1.8. The undersigned states that the response was filed properly on February 3, 2005 under the requirements of 37 CFR §1.8. A stamped postcard was received from the Office to

McDONNELL BOEHNEN HULBERT & BERGHOFF LLP 300 SOUTH WACKER DRIVE, 32ND FLOOR CHICAGO, IL 56606 TELEPHONE (312) 913-0001

,

evidence receipt. See, Appendix G. The response included an explanation of the situation and a

written copy and computer-readable form of the sequence listing. See, Appendix G.

Well over a year later, on March 3, 2006, a notice of abandonment for failure to reply to the

notification of missing requirements of February 28, 2002 was issued. See, Appendix H.

Attached to the notification was a Raw Sequence Listing Error Report dated January 18, 2006. It

is unclear which version of the sequence listing was used to generate this report or why a copy of

the Raw Sequence Listing Error Report from the January 3, 2005 notification was never provided

to the Applicants.

All replies have been filed within time periods set within the notifications. The Office has not

alleged that the application has been abandoned based on an insufficiency of reply. See, MPEP

§711.03(a). Applicants have made a good faith effort to timely and correctly respond to the

notifications received from the office despite the fact that the notifications were incomplete

and/or inconsistent (i.e., missing reports or stating that the disk was damaged and/or unreadable

and providing a report from a clearly readable disk) and a request for clarification went

unanswered. Applicants respectfully request that the application be reinstated.

A new written copy and computer readable form of the sequence listing is attached. The new

version of the sequence listing addresses the errors in the Raw Sequence Listing Report attached

to the Notification of Abandonment. Applicants respectfully request that this version of the

sequence listing be entered into the application in place of previously submitted versions of the

sequence listing. The written and computer readable forms of the sequence listing are identical

and add no new matter.

Respectfully submitted,

Dated: 3/16/06

By:

Reg. No. 43,673

McDONNELL BOEHNEN HULBERT & BERGHOFF LLP 300 SOUTH WACKER DRIVE, 32ND FLOOR CHICAGO, IL 60606 TELEPHONE (312) 913-0001

3

MAR 2 0 2006 In re Ap

PATENT IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: TBA
Examiner: TBA
Atty. Dckt. No.: 00-505-B
Intnl. Appl. No.: PCT/US00/2130

For: MICROBIAL POLYNUCLEOTIDES EXPRESSED DURING INFECTION OF A HOST

TRANSMITTAL LETTER

Asst. Commissioner for Patents Washington, D.C. 20231

Dear Sir:

1.

In regard to the above identified application,

- We are transmitting herewith the attached:
 - a) Response to Notice to File Missing Parts;
 - b) Declaration and Power of Attorney;
 - c) Statement Under 37 C.F.R. § 1.821
 - d) Paper copy of Sequence Listing and Diskette copy;
 - e) Filing Fee Check;
 - f) Return postcard.
- 2. With respect to fees:
 - a) A check in the amount of \$65.00 is enclosed.
 - b) Please charge any underpayment or credit any overpayment our Deposit Account, No. 13-2490.
- 3. GENERAL AUTHORIZATION: Please charge any additional fees or credit overpayment to Deposit Account No. 13-2490. A duplicate copy of this sheet is enclosed.
- 4. CERTIFICATE OF MAILING UNDER 37 CFR § 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described in paragraph 1, are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Asst. Commissioner for Patents, Washington, D.C. 20231 on March 27, 2002.

Date: March 27, 2002

Lisa M.W. Hillman Registration No. 43,673

McDonnell Boehnen Hulbert & Berghoff 300 South Wacker Drive Chicago, IL 60606 (312)913-0001

Corressioner for Patents, Box PCI Limited States Patent and Emdomark Office Washington, D.C. 2023

U.S. APPLICATION NUMBER NO.

FIRST NAMED APPLICANT

ATTY, DOCKET NO

09/980.845

McDonnell Boehnen Hulbert & Berghoff

300 S Wacker Drive Suite 3200

Lisa M.W. Hillman

Chicago, IL 60606

Ann Progulske-Fox

00-505-B

INTERNATIONAL APPLICATION NO.

PCT/US00/21340

I.A. FILING DATE

PRIORITY DATE

08/04/2000

08/06/1999

CONFIRMATION NO. 3701 371 FORMALITIES LETTER

OC000000007521267*

Date Mailed: 02/28/2002

NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as a Designated Office (37 CFR 1.494):

- U.S. Basic National Fees
- Indication of Small Entity Status
- Priority Document
- Biochemical Sequence Listing
- Copy of references cited in ISR
- Copy of the International Application
- Copy of the International Search Report
- Request for Immediate Examination
- Small Entity Statement

DOCKETED

MAR 0 8 2002

The following items MUST be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

 Oath or declaration of the inventors, in compliance with 37 CFR 1.497(a) and (b), identifying the application by the International application number and international filing date.

ALL OF THE ITEMS SET FORTH ABOVE MUST BE SUBMITTED WITHIN TWO (2) MONTH FROM THE DATE OF THIS NOTICE OR BY 22 or 32 MONTHS (where 37 CFR 1.495 applies) FROM THE PRIORITY DATE FOR THE APPLICATION, WHICHEVER IS LATER. FAILURE TO PROPERLY RESPOND WILL RESULT IN ABANDONMENT.

The time period set above may be extended by filing a petition and fee for extension of time under the provisions of 37 CFR 1.136(a).

The following items MUST be furnished within the period set forth below:

- The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 CFR 1.821-1.825 for the following reason(s):
 - A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 CFR 1.821(e).
 - APPLICANT MUST PROVIDE:
 - An initial or substitute computer readable form (CRF) of the "Sequence Listing."
 - A statement that the contents of the paper or compact disc and the computer readable form are the same and, where applicable, include no new matter, as required by 37 CFR 1.821(e), 1.821(f), 1.821(g), 1.825(b) or 1.825(d).
- For questions regarding compliance to 37 CFR 1.821-1.825 requirements, please contact:
 - For Rules Interpretation, call (703) 308-4216
 - To Purchase Patentin Software, call (703) 306-2600
 - For Patentln Software Program Help, call (703) 306-4119 or e-mail at patin21help@uspto.gov or patin3help@uspto.gov
 - A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 CFR 1.821(e).

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

A copy of this notice MUST be returned with the response.

VONDA M WALLACE

Telephone: (703) 305-3736

PART 1 - ATTORNEY/APPLICANT COPY

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY, DOCKET NO.
09/980,845	PCT/US00/21340	00-505-B

FORM PCT/DO/EO/905 (371 Formalities Notice)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of)
••) Group Art Unit: TBA
Progulske-Fox)
•) Examiner: TBA
Serial No. 09/980,845)
•) Atty. Dckt. No.: 00-505-B
International Filing Date: Aug. 4, 2000)
) Intnl. Appl. No.: PCT/US00/2130
Priority Date: Aug. 6, 1999)

For: MICROBIAL POLYNUCLEOTIDES EXPRESSED DURING INFECTION OF A HOST

RESPONSE TO NOTICE TO FILE MISSING PARTS

Box Missing Parts Assistant Commissioner of Patents Washington, D.C. 20231

Dear Sir:

The attached executed declaration is submitted in response to the Notification of Missing Requirements Under 35 U.S.C. 371 in the United States Designated/Elected Office mailed on February 28, 2002, in the above-mentioned case. Also enclosed is a paper copy of the sequence listing, a diskette containing the sequence listing and Statement Under 37 C.F.R. §1.821. A check for sixty-five dollars (\$65) for an oath or declaration surcharge is enclosed. It is believed that no further fee is due to make this filing complete; however, if a fee or credit is due the Commissioner is authorized to charge or credit our Deposit Account No. 13-2490.

Date: 3/27/07

Respectfully submitted,

Registration No.: 43,673

CERTIFICATE OF MAILING (37 C.F.R. 1.8a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner of Patents, Washington D.C. 20231, on 3/27/0.2

Date: 3/27/02

Lisa M.W. Hillman



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE (Case No.00-505-B)

~		
In the	Application of:)
	Progulske-Fox) Art Group: Not assigned
Serial	No.: 09/980,845)) Francisco Net essimod
Filed:	August 4, 2000) Examiner: Not assigned)
For:	Microbial Polynucleotides Expressed During Infection of a Host))
P.O. B	issioner for Patents ox 1450 ndria, VA 22313-1450	
	TRANSN	ITTAL LETTER
Sir:	· · · · · ·	
1.	The Compact Disc contained herein ("C submitted under 37 C.F.R.§1.52(e):	0-505 ST25")
 ☑ Is formatted for IBM-PC Machines ☑ Is compatible with MS-Windows Operating System ☑ Contains the file "00-505 ST25" which is 26,624 bytes in size and was created on 03/16/2006. 		
2. Statement under 37 C.F.R. § 1.821(f): The undersigned certifies that the original CD-R submitted herein, titled "00-505 ST25" (COPY 1) and the copy CD-R entitled "00-505 ST25" (COPY 2) are identical in content as required by C.F.R. § 1.52(e)(4).		
	R	spectfully submitted,
	M	cDonnell Bochnen Hulbert & Berghoff LLP
		, 1

By:

Lisa M.W. Hillman Reg. No. 43,673

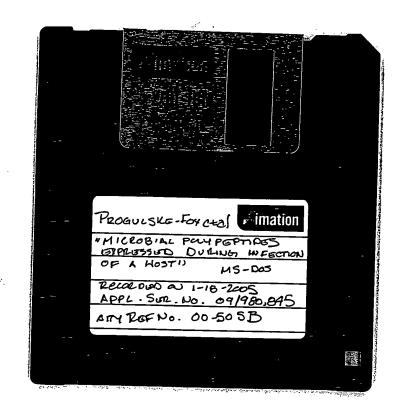
McDonnell Boehnen Hulbert & Berghoff LLP 300 South Wacker Drive

Dated: March 16, 2006

32nd Floor

Chicago, Illinois 60606 Phone: 312-913-0001 Fax: 312-913-0002

BEST AVAILABLE COPY



BEST AVAILABLE COPY

Patents and Trademarks Hon. Commissioner of

SN 09/980,845

Case No.: 00-505-B

LMWH/tmp

Att

Re: Applicant Progulske-Fox

Microbial Polynucleotides Expressed During Infection of a Host

Please place the Patent Office receipt stamp hereon and mail to acknowledge eceipt of:

Sir:

▼ Transmittal Letter (with Duplicate)▼ Response to Notice of Defective Response

Paper and disk copy of correct sequence listing Return Receipt Postcard

Fee Enclosed \$0.00 February 3, 2005

McDonnell Boehnen Hulbert & Berghoff Attorney for Applicant Respectfully,



UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address COMMISSICOVER FOR PATENTS
P. DER 1610
ASCLARAGE, VEGICLE 22113-1450

OFFICE STATES

U.S. APPLICATION NUMBER NO. FIRST NAMED APPLICANT

ATTY, DOCKET NO.

09/980,845

Ann Progulske-Fox

00-505-B

INTERNATIONAL APPLICATION NO.

PCT/US00/21340

08/04/2000

08/06/1999

Lisa M.W. Hillman McDonnell Boehnen Hulbert & Berghoff 300 S Wacker Drive Suite 3200

Chicago, IL 60606

CONFIRMATION NO. 3701

371 ABANDONMENT/TERMINATION LETTER

'OC000000018184385'

Date Mailed: 03/03/2006

NOTIFICATION OF ABANDONMENT

The United States Patent and Trademark Office in its capacity as a Designated / Elected Office (37 CFR 1.495) has made the following determination:

 Applicant has failed to respond to the notification of MISSING REQUIREMENTS (Form PCT/DO/EO/905), mailed 02/28/2002 within the time period set therein.

Therefore, the above identified application failed to meet the requirements of 35 U.S.C. 371 and 37 CFR 1.495, and is ABANDONED AS TO THE UNITED STATES OF AMERICA.

VONDA M WALLACE

Telephone: (703) 308-9140 EXT 225

PART 3 - OFFICE COPY

FORM PCT/DO/EO/909 (371 Abandonment Notice)

MAR 20 2006 B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of)	
)	Group Art Unit: TBA
Progulske-Fox)	
)	Examiner: TBA
Serial No. 09/980,845)	
)	Atty. Dckt. No.: 00-505-B
International Filing Date: Aug. 4, 2000)	(
.)	Intnl. Appl. No.: PCT/US00/2130
Priority Date: Aug. 6, 1999	

For: MICROBIAL POLYNUCLEOTIDES EXPRESSED DURING INFECTION OF A HOST

STATEMENT UNDER 37 C.F.R. §1.821

Honorable Assistant Commissioner for Patents Washington, D.C. 20231

Dear Sir:

Enclosed is a written copy and a computer-readable copy of the sequence listing in the above mentioned case. The information recorded in computer readable form is identical to the written sequence listing. No new matter is added by the sequence listing.

Respectfully submitted,

Date: 3-27-02

Lisa M.W. Hillman Reg. No. 43,673

MCDONNELL, BOEHNEN, HULBERT & BERGHOFF 300 South Wacker Drive Chicago, IL 60606 (312) 913-0001

CERTIFICATE OF MAILING (37 C.F.R. 1.8a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner of Patents, Washington D.C. 20231, on 3-27-02.

Date: 3-27-02

Lisa M.W. Hillman



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE (00-505-B)

In re the Application of: Progulske-Fox)
Serial No: 09/980,845) Group Art Unit: TBA
Filed: August 4, 2000) Examiner: TBA
For: Microbial Polynucleotides Expressed During Infection of a Host)

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

STATEMENT UNDER 37 C.F.R. § 1.821(f)

Sir/Madam:

The undersigned declares that the content of the Sequence Listing, submitted in the above-identified application in compliance with 37 C.F.R. § 1.52(e) on Compact Disc-Recordable (CD-R) medium in duplicate (COPY 1 and COPY 2) in licu of the paper copy under 37 C.F.R. § 1.821(c) and the computer readable form copy of the Sequence Listing, submitted in the above-identified application in accordance with 37 C.F.R. 1.821(e), are identical in content. The sequence listing, submitted herewith, does not extend beyond the scope of the specification, and thus, does not contain new matter.

Respectfully submitted,

McDonnell Boehnen Hulbert & Berghoff LLP

Dated: March 16, 2006

Lisa M.W. Hillman Reg. No. 43,673

McDonnell Boehnen Hulbert & Berghoff LLP 300 South Wacker Drive, 32nd Floor Chicago, Illinois 80606

PHONE: 312-913-0001 FAX: 312-913-0002

MAR 2 0 2006 W

SEQUENCE LISTING

Handfield, Martin Brady, Jeannine Progulske-Fox, Ann Hillman, Jeffrey D.

- <120> Microbial Polynucleotides Expressed During Infection of a Host
- <130> MBHB00-505B
- <140>
- <141>
- <150> 60/147,551
- <151> 1999-08-06
- <150> PCT/US00/21340
- <151> 2000-08-04
- <160> 20
- <170> PatentIn Ver. 2.1
- <210> 1
- <211> 849
- <212> DNA
- <213> Actinobacillus actinomycetemcomitans
- <220>
- <221> misc feature
- <222> (566)
- <223> N stands for any nucleotide.
- <220>
- <221> misc_feature
- <222> (625)
- <223> N stands for any nucleotide.
- <220>
- <221> misc_feature
- <222> (627)
- <223> N stands for any nucleotide.
- <220>
- <221> misc_feature
- <222> (636)
- <223> N stands for any nucleotide.
- <220>
- <221> misc_feature
- <222> (650)
- <223> N stands for any nucleotide.
- <220>
- <221> misc_feature

```
<222> (656)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (661)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (672)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (681)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (720)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (723)
<223> N stands for any nucleotide.
<400> 1
gatcgcgtaa acggtgtaac acggaaagca attgtttaat gtcggcaaaa tgcagccctg 60
tqqtcqqttc qtccaqaata tacaqqqttt tgcccgtatc ccgtttggag agttccgtcg 120
ccagtttcac ccgttgcgct tccccgccgg acagggtggt agaggattgc cccaagcgaa 180
tataagacaa gcccacgtca atcagggttt gcaatttacg cgcaatcatt ggaatggcat 240
cqaaaaactc qcqcqcatct tccaccqtca tgtccagcac ctgatgaatg gttttacctt 300
tgtagcggat ttccagggtt tcgcgattgt aacgcttgcc tttacattgg tcgcaaggca 360
cgtacacatc gggcaggaag tgcatttcca ctttgattac gccgtcgccc tggcaggctt 420
acagegeeeg eegegeacgt taaaactgaa acgeeeeggg ttataacege gegeacggge 480
tttcggtacg ccggcaaaca attcgcgaat cggcgtgaat acgcccgtgt aagttgcccg 540
gttggagcgt ggcgtgcgtc caatcnggct ttggttaata tcaatacttt atcgaaaaat 600
tccaaacctt taatggactt gtacngngaa acctengeat tttctgcaen attaangegt 660
nttgtgcaat anggaacaaa ntgtcgttaa tcagtgtaga atttacctta accggacacn 720
congtgatgo aggtaaataa goocacggga atgtotaaat tgacgttttt caggttgtta 780
ccggaagcgc cgaacaattt gagcattttt ttcttatcaa gtgcggtacg ttttttcggt 840
                                                                   849
atttcgatc
<210> 2
<211> 357
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 2
gatcactaag ttgttcaatc ctttcgcttg ggaatctttg tctaaatacg gtttatgttg 60
cattgcgtta acgtctaaat cacctttaga cactgcagtg tttggcaagg cgtagtcatg 120
aataaaacgt attctacgtc taagttgtat ttttcttttg ccactttcgc tgcgatttca 180
gccacttggt gttccggtcc tgccatcacg cccactttga ttgttgccgg ggcttctgcc 240
qccgqtttqt ctqccqqtqc qqcttccqqt tttttctctt cattacaagc ccgttaaggc 300
```

10 mg 70 mg

```
<210> 3
<211> 886
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (554)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (596)
<223> N stands for any nucleotide.
<400> 3
gatcaaactq qtqqcqcaaq qgcaqcqcqt agcaaattta cccqatattt tqqtctatqc 60
gcgcgtcggc aacggcatgg tagggcgacg ccgtggttta aaccaagcca aagcggaatg 120
gcgcttattt aagctaaaac accatcttgg cattcaggga tttttatccg ggctattcac 180
ttttgtcctg cgttccggtg ccagattatt gccgacatca ttactgaaaa acatctatca 240
aaccttttta agaaaataac atgatgaaat taaactgtat tttaaaaata tccggaattt 300
ccaccgcact ttttctagcg ggttgttcct caaattcaag tgcgccgacg caatcctctg 360
agcaggegaa ttetgttaeg getgtgaate ecaetgeggt gtacagtaag eccegeaett 420
tggataactt caacgattat gtgaatttct taaaaggtaa agcagcggca gaaggcgttt 480
ctgccgacgt attgaatgca caaaataata ttaattatat tcaaaaatcc gtggatttgg 540
acgatcaaca agenggeaga attegeaage gtgateeaaa tgeeeegeeg ateatnaatt 600
ccgaacggca cgaccaatta cttaaatcgt gtattaacca agaataaagt agacacggca 660
gaagcacgtt attgggaaca attgccgcag cttgaaaatg cttcaaagaa attcagcgta 720
ccgaaaaatt atctgttagc cttgtggggc atggagagta gctttggcta ttatcagggc 780
aattacgatg tgttatccac cttagccact cttgcttttg acggacgccg tgaagcctta 840
ttcagcaaag aattcatcgc cgccatgaaa atgctacagc gcgatc
<210> 4
<211> 507
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc_feature
<222> (4)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (9)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (21).
<223> N stands for any nucleotide.
```

<220>

```
<221> misc_feature
<222> (23)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (29)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (32)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (35)..(36)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (39)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (42)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (45)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (49)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (52)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (58)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (61)..(62)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (65)
```

· Company

```
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (69)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (73)
<223> N stands for any polynucleotide.
<220>
<221> misc feature
<222> (97)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (102)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (138)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (457)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (459)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (467)
<223> N stands for any nucleotide.
<400> 4
ttgntaccnt agccgctgac nanaactanc angcnntgna tnatntcgna tnattaanat 60
nngcnaggng cancagetta cetttgeega eggttenetg tntgaaageg ceattegeaa 120
agtgccggtg gaggcggnga aaattcactc acttggtgcg gaaggcaatg atgtgggatt 180
gaaagcccat catggcgggt ggataaagcg ttatttttta tgtcggcaga tgcctttcct 240
gcgttaaatg cgttattaga cgaaaatttt tcgtatcagg acacagcagt ttacggcgag 300
aattttgtgg tttccgcgct gaatgaagat tccgtgtgtg tgggcgatat ttatcaaatc 360
ggctcctgcg tggtggaggt gtcgcagccg cgtaaacctt gtgagcgctt atcgaaaaat 420
accaataatc cgaacacgca acaaaccgtg tacgctncng ctggtcnggc tggtatgtgc 480
cggtggtacc ccaaggggga aattcaa
<210> 5
<211> 1087
```

<212> DNA

```
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (622)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (642)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (661)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (669)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (6.85)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (690)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (700)
<223> N stands for any nucleotide.
<400> 5
gatcgcaaca agcgcagttt ctatatttcc gccgcccgca gtgagatttt caatttaatc 60
gttgccaaac gtattgaact cagtctggcg cagcaggtct taaatggaga cgttttgcaa 120
ctgaacggtt cgcacagttg gtttgtggcg gacgcatcgg aagatttgac gcaactgcaa 180
agtgcggtgg attttgagaa tgaaattttt gtcgcgcacc aagccttgtt ccatttgatg 300
cggcaagaac gcgtgaaagc cgcccgccgt ccgattttaa tgcaggcgca acagtttcaa 360
tgqcaatttg aaccqaacqg tttgcgcctt aaattttatt tgccggcagg cagttacgcc 420
acggcgttgg tacgcgagct ggtgaatgtt gaaaactgaa aaacgagaag aaaaacagga 480
ataacaagaa catgaatatt ttattaagta acgatgacgg cattcacgcg ccgggcattc 540
gtgtgatggc agaacattgc gtaagattgc caatgtgacc atcgtcgcgc cggacagcaa 600
ccgcaagcgc cgccttcagt tncttaacct tggtgaagcc gntgtattcc gttcatttgg 660
naaagcggng attattgcgt caacngcacn cccggcggan tgcgtgcata ttgccctgac 720
gggttttctt tccgggcgca tcgatttggt gatttccggc atcaacgccg gggcgaacct 780
gggcgatgat gtgctatatt ccggcacggt cgcggcagca tttgaagggc gtcatctggg 840
cttgccgtct attgcggtat cgctcgatgg tcgtcaacat tttgaaacgg cggcgcgtgt 900
ggtatgcgat ttggtgccga aattacacgc ccaattatta ggcaaacacg aaattctgaa 960
tattaacgtg cccgatgtgc cttacgaaga actgaaaggc attaaagtgt gccatttggg 1020
ctaccgttct tccgcttctg aagtgattaa acagcaaagc ccgcgtggcg aagacatgta 1080
                                                                1087
ttggatc
```

-- -: -

```
<210> 6
<211> 681
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (609)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (614)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (651)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (665)
<223> N stands for any nucleotide.
<400> 6
gatctgccgt tggcgaaccc ttacgaaatg ctgatcctcg cgtccatcgt ggaaaaagaa 60
acceggeattg etgeagaacg eccaeaagtg gegteggtat teattaateg gttaaaagee 120
aaaatgaagc tgcaaaccga tccgaccgtc atttacggca tgggcgacga ctacaacggc 180
aatattcgca aaaaagattt ggaaacgcca acgccttata acacctatgt gattgacggc 240
ttgccgccga caccgattgc gatgccgagt gaagaggcgt tacaggcggt ggcacatccg 300
gcgcaaacgg cgttttatta tttcgtggca gacggcacgg ggggacacaa attcagtcgt 360
aatttaaacg aacataacaa agcggtgcag caatatttgc gctggtaccg cgaacaaaac 420
ggaaaataat atggtaggca aatttattgt cattgaaggc ttggaaggcg caggcaaaag 480
caccgctcat caatgcgttg tggatacgtt aaaaacgtta ggtgttgggg aagtcatctc 540
taccegegag cegggeggca caccegttgg eggaaaagct aegceatete attaaacatg 600
aaaaccaana gccngtgacc cgataaagcg gaattactca tgctgtatgc ngccgcctgc 660
                                                                   681
aattngtggg aaaatgtgat c
<210> 7
<211> 822
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc_feature
<222> (532)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (630)
<223> N stands for any nucleotide.
```

```
<220>
<221> misc feature
<222> (696)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (710)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (722)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (725)
<223> N stands for any nucleotide.
<400> 7
gatcgataaa aatcagcaag gcaaccactc ttaacaagaa ttgccatacc gtccaatatc 60
gtcgccaata ctgaatcgcg tagagcatgg ctaacgcaat catagcgcgt aaagtcggaa 120
tagcaagccc cgccagttgg ctgtataaca acgcaaaaat gaatccgcac agaatcggaa 180
atgtcgggct gatgtaacgc gtcggcaagg caaattgcag tagacgcgcc aaggtaaaac 240
ccagcatcat cgccagtccg atatgcagcc ctgaaatggc aattaaatgc gccgtatttg 300
ttttttgata aatttgccaa gttttttggt ctaagcggaa acgttcgcca aaaccgagtg 360
ccagcaacaa gccttgtcgg ggtaaattct ccgtttgttg taaggcttga ttgagagcgg 420
tttggcgtaa cgaaaaaacg ttttccaatt tgaccgcact tttaatctct gcccaagcgg 480
tgatgtgctt gccgaaatac catggctggc ggtcaaaacc gtcaaaattc angcgggaag 540
aaagcgctcg caagcgtaaa ttgcctgcgt aacgttcgcc cggggttgac tggttgcttg 600
agtttccatt qcqcqtaaat acqttgttcn gggaagattt tcggcgaagt tttggcgccg 660
aataacccag gggttggata atgctgctga tgccanaaat ttccttgacn ggtaaatttc 720
cnggnggaac gggttttcgg cggcagattg gcaagattat ccgcctgggt cagtatggaa 780
attgccgatt ggtggacgta agcggactga atcatcaaga tc
                                                                   822
<210> 8
<211> 949
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (538)
<223> N stands for any nucleotide.
<400> 8
gatcaggttg ccgtaaccgc gtaaggcgtt acccgcgtaa accactcgac ctgcggcggc 60
ggcattgact gcttgtctgc gagaaccact gatgtcgatg cctttgttac cgccgtcggc 120
gttagagaaa ccttgaatca cattgccgtt ggtcggccag cgccatgcca cgttggatac 180
tgccggtgcg gtgcccgctt gggttatcgg ctgattggtt gccggtgcag cagtacctac 240
gccggcttta atcgggccgg taatcgtgcc gtcggaacca tattgtgtgc cgtttgcgcc 300
cggggtgtaa gttacggtcg gttcaccacc ttgcgtagcc ggttgggtga ccgtcggttg 360
catttgcggt gcagctttcg tttgcaccgt aaccgttgtg ccgcggctca cctttaaggt 420
ttgtccgacg cttaagctgt aaggttcgga catattattc aacgccgcca attctttcac 480
atccaaacca gaaatgtagg cgataaggaa catggtgtca cctttgcgta cggtatangt 540
```

```
ttcacctttg tagaaacctt tgttgatttg gctgtaatcc ggtgcgttag tggtcgggtt 600
acctggaatg gtgaaatctt gggatgcctg ttgcgggtga attttccccg gcaggttggg 660
tttgcttaac ccggttgtgc tttgcaatgc aaactgttga tacatcggtt gaaaaatcgg 720
ctgcggagta gattgtgcgc cggtcgcctg tagattgttc gactgggcaa tcggaccgtt 780
categaageq ggtacattgc cttgttggat ttgeggttee catgtgetat tgeegecate 840
ggttgaaccg tccaccggtt gcatgagtcc cggggataag gtaccgtcgg cgttttccac 900
cggtgccggt gtattcgaag tacaggccgc taacacggca atgctgatc
<210> 9
<211> 277
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 9
agagaaaaaa ccggaagccg caccggcaga caaaccggcg gcagaagccc cggcaacaat 60
caaagtgggc gtgatggcag gaccggaaca ccaagtggct gaaatcgcag cgaaagtggc 120
aaaagaaaaa tacaacttag acgtagaata cgttttattc atgactacgc cttgccaaac 180
actgcagtgt ctaaaggtga tttagacgtt aacgcaatgc aacataaacc gtatttagac 240
aaagattccc aagcgaaagg attgaacaac ttagtga
<210> 10
<211> 259
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 10
gatcaaactg gtggcgcaag ggcagcgcgt agcaaattta cccgatattt tggtctatgc 60
gegegtegge aacggeatgg tagggegaeg cegtggttta aaccaageca aageggaatg 120
gcgcttattt aagctaaaac accatcttgg cattcaggga tttttatccg ggctattcac 180
ttttgtcctg cgttccggtg ccagattatt gccgacatca ttactgaaaa acatctatca 240
                                                                259
aaccttttta agaaaataa
<210> 11
<211> 459
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 11
gatcgcaaca agegcagttt ctatatttcc gccgcccgca gtgagatttt caatttaatc 60
gttgccaaac gtattgaact cagtctggcg cagcaggtct taaatggaga cgttttgcaa 120
ctgaacggtt cgcacagttg gtttgtggcg gacgcatcgg aagatttgac gcaactgcaa 180
agtgcggtgg attttgagaa tgaaattttt gtcgcgcacc aagccttgtt ccatttgatg 300
cggcaagaac gcgtgaaagc cgcccgccgt ccgattttaa tgcaggcgca acagtttcaa 360
tggcaatttg aaccgaacgg tttgcgcctt aaattttatt tgccggcagg cagttacgcc 420
                                                                459
acggcgttgg tacgcgagct ggtgaatgtt gaaaactga
<210> 12
<211> 596
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
```

. . -:-

```
<221> misc feature
<222> (131)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (151)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (170)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (178)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (194)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (199)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (209)
<223> N stands for any nucleotide.
<400> 12
atgaatattt tattaagtaa cgatgacggc attcacgcgc cgggcattcg tgtgatggca 60
gaacattgcg taagattgcc aatgtgacca tcgtcgcgcc ggacagcaac cgcaagcgcc 120
gccttcagtt ncttaacctt ggtgaagccg ntgtattccg ttcatttggn aaagcggnga 180
ttattgcgtc aacngcacnc ccggcggant gcgtgcatat tgccctgacg ggttttcttt 240
cegggegeat egatttggtg attteeggea teaacgeegg ggegaacetg ggegatgatg 300
tgctatattc cggcacggtc gcggcagcat ttgaagggcg tcatctgggc ttgccgtcta 360
ttgcggtatc gctcgatggt cgtcaacatt ttgaaacggc ggcgcgcgtg gtatgcgatt 420
tggtgccgaa attacacgcc caattattag gcaaacacga aattctgaat attaacgtgc 480
ccgatgtgcc ttacgaagaa ctgaaaggca ttaaagtgtg ccatttgggc taccgttctt 540
ccgcttctga aqtqattaaa cagcaaagcc cgcgtggcga agacatgtat tggatc
<210> 13
<211> 429
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 13
gatctgccgt tggcgaaccc ttacgaaatg ctgatcctcg cgtccatcgt ggaaaaagaa 60
accggcattg ctgcagaacg cccacaagtg gcgtcggtat tcattaatcg gttaaaagcc 120
aaaatgaagc tgcaaaccga tccgaccgtc atttacggca tgggcgacga ctacaacggc 180
aatattegea aaaaagattt ggaaacgeea acgeettata acacetatgt gattgaegge 240
```

-------

ttgccgccga caccgattgc gatgccgagt gaagaggcgt tacaggcggt ggcacatccg 300 gcgcaaacgg cgttttatta tttcgtggca gacggcacgg ggggacacaa attcagtcgt 360 aatttaaacg aacataacaa agcggtgcag caatatttgc gctggtaccg cgaacaaaac 420 ggaaaataa <210> 14 <211> 162 <212> DNA <213> Actinobacillus actinomycetemcomitans <400> 14 atggtaggca aatttattgt cattgaaggc ttggaaggcg caggcaaaag caccgctcat 60 caatgcgttg tggatacgtt aaaaacgtta ggtgttgggg aagtcatctc tacccgcgag 120 ccgggcggca cacccgttgg cggaaaagct acgccatctc at <210> 15 <211> 67 <212> PRT <213> Actinobacillus actinomycetemcomitans Glu Lys Lys Pro Glu Ala Ala Pro Ala Asp Lys Pro Ala Ala Glu Ala 10 Pro Ala Thr Ile Lys Val Gly Val Met Ala Gly Pro Glu His Gln Val Ala Glu Ile Ala Ala Lys Val Ala Lys Glu Lys Tyr Asn Leu Asp Val 35 40 Glu Tyr Val Leu Phe Met Thr Thr Pro Cys Gln Thr Leu Gln Cys Leu 55 60 Lys Val Ile 65 <210> 16 <211> 85 <212> PRT <213> Actinobacillus actinomycetemcomitans Ile Lys Leu Val Ala Gln Gly Gln Arg Val Ala Asn Leu Pro Asp Ile Leu Val Tyr Ala Arg Val Gly Asn Gly Met Val Gly Arg Arg Arg Gly Leu Asn Gln Ala Lys Ala Glu Trp Arg Leu Phe Lys Leu Lys His His 35 40 Leu Gly Ile Gln Gly Phe Leu Ser Gly Leu Phe Thr Phe Val Leu Arg 55 60

The second second

Ser Gly Ala Arg Leu Leu Pro Thr Ser Leu Leu Lys Asn Ile Tyr Gln 65 70 75 80

Thr Phe Leu Arg Lys

<210> 17

<211> 152

<212> PRT

<213> Actinobacillus actinomycetemcomitans

<400> 17

Asp Arg Asn Lys Arg Ser Phe Tyr Ile Ser Ala Ala Arg Ser Glu Ile 1 5 10 15

Phe Asn Leu Ile Val Ala Lys Arg Ile Glu Leu Ser Leu Ala Gln Gln 20 25 30

Val Leu Asn Gly Asp Val Leu Gln Leu Asn Gly Ser His Ser Trp Phe 35 40 45

Val Ala Asp Ala Ser Glu Asp Leu Thr Gln Leu Gln Gln Arg Leu Ala 50 55 60

Gln Arg Asp Ile Leu Leu Thr Ala Pro Leu Ile Gly Glu Glu Asp Lys
65 70 75 80

Ser Ala Val Asp Phe Glu Asn Glu Ile Phe Val Ala His Gln Ala Leu 85 90 95

Phe His Leu Met Arg Gln Glu Arg Val Lys Ala Ala Arg Arg Pro Ile 100 105 110

Leu Met Gln Ala Gln Gln Phe Gln Trp Gln Phe Glu Pro Asn Gly Leu 115 120 125

Arg Leu Lys Phe Tyr Leu Pro Ala Gly Ser Tyr Ala Thr Ala Leu Val

Arg Glu Leu Val Asn Val Glu Asn 145 150

<210> 18

<211> 198

<212> PRT

<213> Actinobacillus actinomycetemcomitans

<220>

<221> UNSURE

<222> (43)

. <223> Xaa stands for any amino acid.

<220>

<221> UNSURE

<222> (50)

<223> Xaa stands for any amino acid. <220> <221> UNSURE <222> (59) <223> Xaa stands for any amino acid. <220> <221> UNSURE <222> (66) <223> Xaa stands for any amino acid. <220> <221> UNSURE <222> (69) <223> Xaa stands for any amino acid. <400> 18 Met Asn Ile Leu Leu Ser Asn Asp Gly Ile His Ala Pro Gly Ile Arg Val Met Arg Thr Leu Arg Lys Ile Ala Asn Val Thr Ile Val Ala Pro Asp Ser Asn Arg Lys Arg Arg Leu Gln Xaa Leu Asn Leu Gly Glu 40 Ala Xaa Val Phe Arg Ser Phe Gly Lys Ala Xaa Ile Ile Ala Ser Thr Ala Xaa Pro Ala Xaa Cys Val His Ile Ala Leu Thr Gly Phe Leu Ser Gly Arg Ile Asp Leu Val Ile Ser Gly Ile Asn Ala Gly Ala Asn Leu 85 90 Gly Asp Asp Val Leu Tyr Ser Gly Thr Val Ala Ala Ala Phe Glu Gly 100 105 Arg His Leu Gly Leu Pro Ser Ile Ala Val Ser Leu Asp Gly Arg Gln 120 His Phe Glu Thr Ala Ala Arg Val Val Cys Asp Leu Val Pro Lys Leu 130 135 140 His Ala Gln Leu Leu Gly Lys His Glu Ile Leu Asn Ile Asn Val Pro 150 155 Asp Val Pro Tyr Glu Glu Leu Lys Gly Ile Lys Val Cys His Leu Gly 165 170 Tyr Arg Ser Ser Ala Ser Glu Val Ile Lys Gln Gln Ser Pro Arg Gly

Service Company of the

Glu Asp Met Tyr Trp Ile 195

180

190

185

<210> 19

<211> 142

<212> PRT

<213> Actinobacillus actinomycetemcomitans

<400> 19

Asp Leu Pro Leu Ala Asn Pro Tyr Glu Met Leu Ile Leu Ala Ser Ile 1 5 10 15

the second second

Val Glu Lys Glu Thr Gly Ile Ala Ala Glu Arg Pro Gln Val Ala Ser 20 25 30

Val Phe Ile Asn Arg Leu Lys Ala Lys Met Lys Leu Gln Thr Asp Pro 35 40 45

Thr Val Ile Tyr Gly Met Gly Asp Asp Tyr Asn Gly Asn Ile Arg Lys
50 55 60

Lys Asp Leu Glu Thr Pro Thr Pro Tyr Asn Thr Tyr Val Ile Asp Gly 65 70 75 80

Leu Pro Pro Thr Pro Ile Ala Met Pro Ser Glu Glu Ala Leu Gln Ala 85 90 95

Val Ala His Pro Ala Gln Thr Ala Phe Tyr Tyr Phe Val Ala Asp Gly
100 105 110

Thr Gly Gly His Lys Phe Ser Arg Asn Leu Asn Glu His Asn Lys Ala 115 120 125

Val Gln Gln Tyr Leu Arg Trp Tyr Arg Glu Gln Asn Gly Lys 130 135 140

<210> 20

<211> 54

<212> PRT

<213> Actinobacillus actinomycetemcomitans

<400> 20

Met Val Gly Lys Phe Ile Val Ile Glu Gly Leu Glu Gly Ala Gly Lys
1 5 10 15

Ser Thr Ala His Gln Cys Val Val Asp Thr Leu Lys Thr Leu Gly Val 20 25 30

Gly Glu Val Ile Ser Thr Arg Glu Pro Gly Gly Thr Pro Val Gly Gly 35 40 45

Lys Ala Thr Pro Ser His 50



JOOS Rec'd PCT/FTO 0 8 APR 2002

Patents and Trademarks Hon. Commissioner of

S/N 09/980,845

LMWH Atty

Re: Applicant - Progulske-Fox, et al.

Case No. 00-505-B

Microbial Polynucleotides Expressed During Infection Of A Host

Sir:

Please place the Patent Office receipt stamp hereon and mail to acknowledge receipt of Transmittal Letter

Signed Declaration Filing Fee Check

Other Response to Notice to File Missing Parts; Statement Under 3 Diskette and paper copy of sequence listing

8 2002 APR

Fee Enclosed

\$ 65.00 March 27, 2002

Respectfully, '
McDonnell Boehnen Hulbert & Berghoff
Attorney for Applicant



Commissioner for Patents, Box PCT United States Patent and Trademark Office Washington, D.C., 20231

U.S. APPLICATION NUMBER NO. FIRST NAMED APPLICANT ATTY. DOCKET NO.

09/980,845 Ann Progulske-Fox 00-505-B

INTERNATIONAL APPLICATION NO.

Lisa M.W. Hillman McDonnell Boehnen Hulbert & Berghoff 300 S Wacker Drive Suite 3200 Chicago, IL 60606 INTERNATIONAL APPLICATION NO.

PCT/US00/21340

1.A. FILING DATE PRIORITY DATE

08/04/2000 08/06/1999

CONFIRMATION NO. 3701
371 FORMALITIES LETTER
100000000008256428*

Date Mailed: 06/12/2002

NOTIFICATION OF DEFECTIVE RESPONSE

DOCKETED

DUE DATE:

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as a Designated Office (37 CFR 1.494):

- U.S. Basic National Fee
- Indication of Small Entity Status
- Priority Document
- Biochemical Sequence Diskette
- Biochemical Sequence Listing
- Copy of IPE Report
- Copy of references cited in ISR
- Copy of the International Application
- Copy of the International Search Report
- Information Disclosure Statements
- Oath or Declaration
- Request for Immediate Examination
- Small Entity Statement

The following items **MUST** be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

Applicant is required to complete the response within a time limit of ONE MONTH from the date of this Notification or within the time remaining in the response set forth in the Notification of Missing Requirements, whichever is the longer. No extension of this time limit may be granted under 37 CFR 1.136, but the period for response set in the Notification of Missing Requirements may be extended under 37 CFR 1.136(a).

The following items **MUST** be furnished within the period set forth below:

• The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 CFR 1.821-1.825 for the following reason(s):

- A copy of the "Sequence Listing" in computer readable form has been submitted. The content of the computer readable form, however, does not comply with the requirements of 37 CFR 1.822 and/or 1.832, as indicated on the attached marked-up copy of the "Raw Sequence Listing."
- The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A substitute computer readable form must be submitted as required by 37 CFR 1.825(d).
- APPLICANT MUST PROVIDE:
 - An initial or substitute computer readable form (CRF) of the "Sequence Listing."
 - An initial or substitute paper copy or compact disc of the "Sequence Listing," as well as an amendment directing its entry into the specification.
- For questions regarding compliance to 37 CFR 1.821-1.825 requirements, please contact:
 - For Rules Interpretation, call (703) 308-4216
 - To Purchase Patentin Software, call (703) 306-2600
 - For Patentin Software Program Help, call (703) 306-4119 or e-mail at patin21help@uspto.gov or patin3help@uspto.gov
 - A copy of the "Sequence Listing" in computer readable form has been submitted. The content of the computer readable form, however, does not comply with the requirements of 37 CFR 1.822 and/or 1.832, as indicated on the attached marked-up copy of the "Raw Sequence Listing."
 - The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A substitute computer readable form must be submitted as required by 37 CFR 1.825(d).

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

A copy of this notice **MUST** be returned with the response.

VONDA M WALLACE

Telephone: (703) 305-3736

PART 1 - ATTORNEY/APPLICANT COPY

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY. DOCKET NO.
09/980,845	PCT/US00/21340	00-505-B
09/900,042		

FORM PCT/DO/EO/916 (371 Formalities Notice)

MAR 2 0 2006 B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of)
**) Group Art Unit: TBA
Progulske-Fox) Examiner: TBA
Serial No. 09/980,845)
) Atty. Dckt. No.: 00-505-B
International Filing Date: Aug. 4, 2000)
) Intnl. Appl. No.: PCT/US00/2130
Priority Date: Aug. 6, 1999)

For: MICROBIAL POLYNUCLEOTIDES EXPRESSED DURING INFECTION OF A HOST

TRANSMITTAL LETTER

Asst. Commissioner for Patents Washington, D.C. 20231

Dear Sir:

In regard to the above identified application,

- 1. We are transmitting herewith the attached:
 - a) Response to Notice of Defective Response;
 - b) Written copy of sequence listing;
 - c) Computer Readable copy of sequence listing; and
 - d) Return postcard
- 2. With respect to fees:
 - a) It is believed no fee is due at this time.
 - b) Please charge any underpayment or credit any overpayment our Deposit Account, No. 13-2490.
- 3. GENERAL AUTHORIZATION: Please charge any additional fees or credit overpayment to Deposit Account No. 13-2490. A duplicate copy of this sheet is enclosed.
- 4. CERTIFICATE OF MAILING UNDER 37 CFR § 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described in paragraph 1, are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Asst. Commissioner for Patents, Washington, D.C. 20231 on June 24, 2002.

Date: June 24, 2002

Lisa M.W. Hillman Registration No. 43,673

Respectfully submitted,

McDonnell Boehnen Hulbert & Berghoff 300 South Wacker Drive Chicago, IL 60606 (312)913-0001

MAR 9.0 2006 W

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of)
••) Group Art Unit: TBA
Progulske-Fox)
Serial No. 09/980,845) Examiner: TBA
Beriai 140. 07/700,045) Atty. Dckt. No.: 00-505-B
International Filing Date: Aug. 4, 2000) ·
D D) Intnl. Appl. No.: PCT/US00/2130
Priority Date: Aug. 6, 1999)

For: MICROBIAL POLYNUCLEOTIDES EXPRESSED DURING INFECTION OF A HOST

RESPONSE TO NOTICE OF DEFECTIVE RESPONSE

Honorable Assistant Commissioner for Patents Washington, D.C. 20231

Dear Sir:

This paper is filed in response to the Notification of Defective Response mailed on June 12, 2002, in the above-mentioned case. It is believed that no fee is due in connection with this filing; however, if a fee is due please charge our deposit account number 13-2490.

Enclosed is a written copy and a computer-readable copy of the sequence listing in the above mentioned case. The information recorded in computer readable form is identical to the written sequence listing. No new matter is added by the sequence listing. Applicants respectfully request that the specification of the application be amended by

CERTIFICATE OF MAILING (37 C.F.R. 1.8a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner of Patents, Washington D.C. 20231, on

4/24/02

Date: 6/24/07

Lisa M W Hillman

deleting the previously filed sequence listing and the entry of the enclosed sequence listing.

Respectfully submitted,

Date: 624/02

Lisa M.W. Hillman Reg. No. 43,673

MCDONNELL, BOEHNEN, HULBERT & BERGHOFF 300 South Wacker Drive Chicago, IL 60606 (312) 913-0001

MAR 2 0 7006 W

SEQUENCE LISTING

```
<110> Handfield, Martin
      Brady, Jeannine
      Progulske-Fox, Ann
      Hillman, Jeffrey D.
<120> Microbial Polynucleotides Expressed During Infection of
      a Host
<130> MBHB00-505B
<140>
<141>
<150> 60/147,551
<151> 1999-08-06
<150> PCT/US00/21340
<151> 2000-08-04
<160> 20
<170> PatentIn Ver. 2.1
<210> 1
<211> 849
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (566)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (625)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (627)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (636)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (650)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
```

```
<222> (656)
<223> N stands for any nucleotide.
<221> misc feature
<222> (661)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (672)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (681)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (720)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (723)
<223> N stands for any nucleotide.
<400> 1
gategegtaa aeggtgtaac aeggaaagca attgtttaat gteggcaaaa tgeagecetg 60
tggtcggttc gtccagaata tacagggttt tgcccgtatc ccgtttggag agttccgtcg 120
ccagtttcac ccgttgcgct tccccgccgg acagggtggt agaggattgc cccaagcgaa 180
tataagacaa gcccacgtca atcagggttt gcaatttacg cgcaatcatt ggaatggcat 240
cgaaaaactc gcgcgcatct tccaccgtca tgtccagcac ctgatgaatg gttttacctt 300
tgtageggat ttccagggtt tcgcgattgt aacgettgcc tttacattgg tcgcaaggca 360
cgtacacatc gggcaggaag tgcatttcca ctttqattac qccqtcqccc tqqcaqqctt 420
acagegeeeg cegegeaegt taaaactgaa acgeeeeggg ttataacege gegeaeggge 480
tttcggtacg ccggcaaaca attcgcgaat cggcgtgaat acgcccgtgt aagttgcccg 540
gttggagcgt ggcgtgcgtc caatcnggct ttggttaata tcaatacttt atcgaaaaat 600
tecaaacett taatggaett gtaengngaa acetengeat tttetgeaen attaangegt 660
nttgtgcaat anggaacaaa ntgtcgttaa tcagtgtaga atttacctta accggacacn 720
congtgatgo aggtaaataa goocacggga atgtotaaat tgacgttttt caggttgtta 780
ccggaagcgc cgaacaattt gagcattttt ttcttatcaa gtgcggtacg ttttttcggt 840
atttcgatc
<210> 2
<211> 357
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 2
gatcactaag tigticaatc cittegetig ggaatetiig tetaaatacg gittatgiig 60
cattgcgtta acgtctaaat cacctttaga cactgcagtg tttggcaagg cgtagtcatg 120
aataaaacgt attctacgtc taagttgtat ttttcttttg ccactttcgc tgcgatttca 180
gccacttggt gttccggtcc tgccatcacg cccactttga ttgttgccgg ggcttctgcc 240
gccggtttgt ctgccggtgc ggcttccggt tttttctctt cattacaagc ccgttaaggc 300
```

```
357
```

```
<210> 3
<211> 886
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (554)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (596)
<223> N stands for any nucleotide.
gatcaaactg gtggcgcaag ggcagcgct agcaaattta cccgatattt tggtctatgc 60
gegegtegge aaeggeatgg tagggegaeg cegtggttta aaecaageca aageggaatg 120
gcgcttattt aagctaaaac accatcttgg cattcaggga tttttatccg ggctattcac 180
ttttgtcctg cgttccggtg ccagattatt gccgacatca ttactgaaaa acatctatca 240
aaccttttta agaaaataac atgatgaaat taaactgtat tttaaaaaata tccggaattt 300
ccaccgcact ttttctagcg ggttgttcct caaattcaag tgcgccgacg caatcctctg 360
agcaggcgaa ttctgttacg gctgtgaatc ccactgcggt gtacagtaag ccccgcactt 420
tggataactt caacgattat gtgaatttct taaaaggtaa agcagcggca gaaggcgttt 480
ctgccgacgt attgaatgca caaaataata ttaattatat tcaaaaatcc gtggatttgg 540
acgatcaaca agenggeaga attegeaage gtgatecaaa tgeecegeeg ateatnaatt 600
ccgaacggca cgaccaatta cttaaatcgt gtattaacca agaataaagt agacacggca 660
gaagcacgtt attgggaaca attgccgcag cttgaaaatg cttcaaagaa attcagcgta 720
cegaaaaatt atetgttage ettgtgggge atggagagta getttggeta ttatcaggge 780
aattacgatg tgttatccac cttagccact cttgcttttg acggacgccg tgaagcctta 840
ttcagcaaag aattcatcgc cgccatgaaa atgctacagc gcgatc
<210> 4
<211> 507
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc_feature
<222> (4)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (9)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (21)
<223> N stands for any nucleotide.
<220>
```

```
<221> misc feature
<222> (23)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (29)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (32)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (35)..(36)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (39)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (42)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (45)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (49)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (52)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (58)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (61)..(62)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (65)
```

```
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (69)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (73)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (97)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (102)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (138)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (457)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (459)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (467)
<223> N stands for any nucleotide.
ttgntaccnt agccgctgac nanaactanc angcnntgna tnatntcgna tnattaanat 60
nngcnaggng cancagetta cetttgeega eggttenetg tntgaaageg ceattegeaa 120
agtgccggtg gaggcggnga aaattcactc acttggtgcg gaaggcaatg atgtgggatt 180
gaaagcccat catggcgggt ggataaagcg ttatttttta tgtcggcaga tgcctttcct 240
qcqttaaatq cqttattaqa cqaaaatttt tcqtatcaqq acacaqcaqt ttacqqcqaq 300
aattttgtgg tttccgcgct gaatgaagat tccgtgtgtg tgggcgatat ttatcaaatc 360
ggetcetgeg tggtggaggt gtcgcagccg cgtaaacctt gtgagegett atcgaaaaat 420
accaataatc cgaacacgca acaaaccgtg tacgctncng ctggtcnggc tggtatgtgc 480
cggtggtacc ccaaggggga aattcaa
<210> 5
```

<211> 1087 <212> DNA

```
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (622)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (642)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (661)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (669)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (685)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (690)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (700)
<223> N stands for any nucleotide.
<400> 5
gategeaaca agegeagttt etatatttee geegeeegea gtgagatttt caatttaate 60
gttgccaaac gtattgaact cagtctggcg cagcaggtct taaatggaga cgttttgcaa 120
ctgaacggtt cgcacagttg gtttgtggcg gacgcatcgg aagatttgac gcaactgcaa 180
agtgcggtgg attttgagaa tgaaattttt gtcgcgcacc aagccttgtt ccatttgatg 300
cggcaagaac gcgtgaaagc cgcccgccgt ccgattttaa tgcaggcgca acagtttcaa 360
tggcaatttg aaccgaacgg tttgcgcctt aaattttatt tgccggcagg cagttacgcc 420
acggcgttgg tacgcgagct ggtgaatgtt gaaaactgaa aaacgagaag aaaaacagga 480
ataacaagaa catgaatatt ttattaagta acgatgacgg cattcacgcg ccgggcattc 540
qtqtqatqqc aqaacattqc qtaaqattqc caatqtqacc atcqtcgcgc cggacagcaa 600
ccqcaaqcqc cqccttcaqt tncttaacct tqqtqaaqcc qntqtattcc gttcatttgg 660
naaageggng attattgegt caacngeaen eeeggeggan tgegtgeata ttgeeetgae 720
gggttttctt tccgggcgca tcgatttggt gatttccggc atcaacgccg gggcgaacct 780
qqqcqatqat qtqctatatt ccqqcacqqt cqcqqcaqca tttgaagggc gtcatctggg 840
cttgccgtct attgcggtat cgctcgatgg tcgtcaacat tttgaaacgg cggcgcgt 900
ggtatgcgat ttggtgccga aattacacgc ccaattatta ggcaaacacg aaattctgaa 960
tattaacgtg cccgatgtgc cttacgaaga actgaaaggc attaaagtgt gccatttggg 1020
ctaccgttct tccgcttctq aagtgattaa acagcaaagc ccgcgtggcg aagacatgta 1080
ttggatc
```

```
<210> 6
<211> 681
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<221> misc feature
<222> (609)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (614)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (651)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (665)
<223> N stands for any nucleotide.
<400> 6
gatctgccgt tggcgaaccc ttacgaaatg ctgatcctcg cgtccatcgt ggaaaaagaa 60
accggcattg ctgcagaacg cccacaagtg gcgtcggtat tcattaatcg gttaaaagcc 120
aaaatgaagc tgcaaaccga tccgaccgtc atttacggca tgggcgacga ctacaacggc 180
aatattcgca aaaaagattt ggaaacgcca acgccttata acacctatgt gattgacggc 240
ttgccgccga caccgattgc gatgccgagt gaagaggcgt tacaggcggt ggcacatccg 300
gcgcaaacgg cgttttatta tttcgtggca gacggcacgg ggggacacaa attcagtcgt 360
aatttaaacg aacataacaa agcggtgcag caatatttgc gctggtaccg cgaacaaaac 420
ggaaaataat atggtaggca aatttattgt cattgaaggc ttggaaggcg caggcaaaag 480
caccgctcat caatgcgttg tggatacgtt aaaaacgtta ggtgttgggg aagtcatctc 540
taccegegag cegggeggea caccegttgg eggaaaaget aegecatete attaaacatg 600
aaaaccaana gccngtgacc cgataaagcg gaattactca tgctgtatgc ngccgcctgc 660
aattngtggg aaaatgtgat c
                                                                   681
<210> 7
<211> 822
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (532)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (630)
<223> N stands for any nucleotide.
```

```
<220>
<221> misc feature
<222> (696)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (710)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (722)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (725)
<223> N stands for any nucleotide.
<400> 7
qatcqataaa aatcaqcaaq qcaaccactc ttaacaaqaa ttqccatacc qtccaatatc 60
gtcgccaata ctgaatcgcg tagagcatgg ctaacgcaat catagcgcgt aaagtcggaa 120
tagcaagccc cgccagttgg ctgtataaca acgcaaaaat gaatccgcac agaatcggaa 180
atgtcgggct gatgtaacgc gtcggcaagg caaattgcag tagacgcgcc aaggtaaaac 240
ccagcatcat cgccagtccg atatgcagcc ctgaaatggc aattaaatgc gccgtatttg 300
ttttttgata aatttgccaa gttttttggt ctaagcggaa acgttcgcca aaaccgagtg 360
ccagcaacaa gccttgtcgg ggtaaattct ccgtttgttg taaggcttga ttgagagcgg 420
tttggcgtaa cgaaaaaacg ttttccaatt tgaccgcact tttaatctct gcccaagcgg 480
tgatgtgctt gccgaaatac catggctggc ggtcaaaacc gtcaaaattc angcgggaag 540
aaagegeteg caagegtaaa ttgeetgegt aaegttegee eggggttgae tggttgettg 600
agtttccatt gcgcgtaaat acgttgttcn gggaagattt tcggcgaagt tttggcgccg 660
aataacccag gggttggata atgctgctga tgccanaaat ttccttgacn ggtaaatttc 720
cnggnggaac gggttttcgg cggcagattg gcaagattat ccgcctgggt cagtatggaa 780
attgccgatt ggtggacgta agcggactga atcatcaaga tc
<210> 8
<211> 949
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc_feature
<222> (538)
<223> N stands for any nucleotide.
<400> 8
gatcaggttg ccgtaaccgc gtaaggcgtt acccqcqtaa accactcqac ctqcqqcqqc 60
ggcattgact gcttgtctgc gagaaccact gatgtcgatg cctttgttac cqccqtcqqc 120
gttagagaaa ccttgaatca cattgccgtt ggtcggccag cgccatgcca cgttggatac 180
tgccggtgcg gtgcccgctt gggttatcgg ctgattggtt gccggtgcag cagtacctac 240
gccggcttta atcgggccgg taatcgtgcc gtcggaacca tattgtgtgc cgtttgcgcc 300
eggggtgtaa gttaeggteg gtteaceaec ttgegtagee ggttgggtga eegteggttg 360
catttgcggt gcagctttcg tttgcaccgt aaccgttgtg ccgcggctca cctttaaggt 420
ttgtccgacg cttaagctgt aaggttcgga catattattc aacgccgcca attctttcac 480
atccaaacca gaaatgtagg cgataaggaa catggtgtca cctttgcgta cggtatangt 540
```

```
ttcacctttg tagaaacctt tgttgatttg gctgtaatcc ggtgcgttag tggtcgggtt 600
acctggaatg gtgaaatett gggatgeetg ttgegggtga atttteeeeg geaggttggg 660
tttgcttaac ccggttgtgc tttgcaatgc aaactgttga tacatcggtt gaaaaatcgg 720
ctgeggagta gattgtgege eggtegeetg tagattgtte gactgggeaa teggacegtt 780
categaageg ggtacattgc cttgttggat ttgeggttec catgtgetat tgeegecate 840
ggttgaaccg tccaccggtt gcatgagtcc cggggataag gtaccgtcgg cgttttccac 900
                                                                949
cggtgccggt gtattcgaag tacaggccgc taacacggca atgctgatc
<210> 9
<211> 277
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 9
agagaaaaaa ccggaagccg caccggcaga caaaccggcg gcagaagccc cggcaacaat 60
caaagtgggc gtgatggcag gaccggaaca ccaagtggct gaaatcgcag cgaaagtggc 120
aaaagaaaaa tacaacttag acgtagaata cgttttattc atgactacgc cttgccaaac 180
actgcagtgt ctaaaggtga tttagacgtt aacgcaatgc aacataaacc gtatttagac 240
aaagattccc aagcgaaagg attgaacaac ttagtga
                                                                277
<210> 10
<211> 259
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 10
gatcaaactg gtggcgcaag ggcagcgct agcaaattta cccgatattt tggtctatgc 60
gegegtegge aacggcatgg tagggcgacg cegtggttta aaccaageca aageggaatg 120
gegettattt aagetaaaac accatettgg catteaggga tttttateeg ggetatteac 180
ttttgtcctg cgttccggtg ccagattatt gccgacatca ttactgaaaa acatctatca 240
aaccttttta agaaaataa
                                                                259
<210> 11
<211> 459
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 11
gatcgcaaca agcgcagttt ctatatttcc gccgcccgca gtgagatttt caatttaatc 60
gttgccaaac gtattgaact cagtctggcg cagcaggtct taaatggaga cgttttgcaa 120
ctgaacggtt cgcacagttg gtttgtggcg gacgcatcgg aagatttgac gcaactgcaa 180
agtgcggtgg attttgagaa tgaaattttt gtcgcgcacc aagccttgtt ccatttgatg 300
cggcaagaac gcgtgaaagc cgcccgccgt ccgattttaa tgcaggcgca acagtttcaa 360
tggcaatttg aaccgaacgg tttgcgcctt aaattttatt tgccggcagg cagttacgcc 420
acggcgttgg tacgcgagct ggtgaatgtt gaaaactga
                                                                459
<210> 12
<211> 596
<212> DNA
<213 > Actinobacillus actinomycetemcomitans
<220>
```

```
<221> misc feature
<222> (131)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (151)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (170)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (178)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (194)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (199)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (209)
<223> N stands for any nucleotide.
<400> 12
atgaatattt tattaaqtaa cqatqacqqc attcacqcqc cqqqcattcg tqtqatqqca 60
gaacattgcg taagattgcc aatgtgacca tcgtcgcgcc ggacagcaac cgcaagcgcc 120
gccttcagtt ncttaacctt ggtgaagccg ntgtattccg ttcatttggn aaagcggnga 180
ttattgegte aacngeacne ceggeggant gegtgeatat tgeeetgaeg ggttttettt 240
cegggegeat egatttggtg attteeggea teaacgeegg ggegaacetg ggegatgatg 300
tgctatattc cggcacggtc gcggcagcat ttgaagggcg tcatctgggc ttgccgtcta 360
ttgeggtatc gctcgatggt cgtcaacatt ttgaaacggc ggcgcgcgtg gtatgcgatt 420
tggtgccgaa attacacgcc caattattag gcaaacacga aattctgaat attaacgtgc 480
ccgatgtgcc ttacgaagaa ctgaaaggca ttaaagtgtg ccatttgggc taccgttctt 540
ccgcttctga agtgattaaa cagcaaagcc cgcgtggcga agacatgtat tggatc
<210> 13
<211> 429
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 13
gatctgccgt tggcgaaccc ttacgaaatg ctgatcctcg cgtccatcgt ggaaaaagaa 60
accggcattg ctgcagaacg cccacaagtg gcgtcggtat tcattaatcg gttaaaagcc 120
aaaatgaage tgcaaaccga teegacegte atttaeggea tgggegaega etacaacgge 180
aatattegea aaaaagattt ggaaaegeea aegeettata acacetatgt gattgaegge 240
```

ttgccgccga caccgattgc gatgccgagt gaagaggcgt tacaggcggt ggcacatccg 300 gcgcaaacgg cgttttatta tttcgtggca gacggcacgg ggggacacaa attcagtcgt 360 aatttaaacg aacataacaa agcggtgcag caatatttgc gctggtaccg cgaacaaaac 420 ggaaaataa <210> 14 <211> 162 <212> DNA <213> Actinobacillus actinomycetemcomitans <400> 14 atggtaggca aatttattgt cattgaaggc ttggaaggcg caggcaaaag caccgctcat 60 caatgegttg tggatacgtt aaaaacgtta ggtgttgggg aagtcatete taccegegag 120 ccgggcggca cacccgttgg cggaaaagct acgccatctc at <210> 15 <211> 67 <212> PRT <213> Actinobacillus actinomycetemcomitans Glu Lys Lys Pro Glu Ala Ala Pro Ala Asp Lys Pro Ala Ala Glu Ala 5 Pro Ala Thr Ile Lys Val Gly Val Met Ala Gly Pro Glu His Gln Val 25 Ala Glu Ile Ala Ala Lys Val Ala Lys Glu Lys Tyr Asn Leu Asp Val Glu Tyr Val Leu Phe Met Thr Thr Pro Cys Gln Thr Leu Gln Cys Leu 55 Lys Val Ile 65 <210> 16 <211> 85 <212> PRT <213> Actinobacillus actinomycetemcomitans Ile Lys Leu Val Ala Gln Gly Gln Arg Val Ala Asn Leu Pro Asp Ile 10 15 Leu Val Tyr Ala Arg Val Gly Asn Gly Met Val Gly Arg Arg Arg Gly Leu Asn Gln Ala Lys Ala Glu Trp Arg Leu Phe Lys Leu Lys His His 40 Leu Gly Ile Gln Gly Phe Leu Ser Gly Leu Phe Thr Phe Val Leu Arg 50

Ser Gly Ala Arg Leu Leu Pro Thr Ser Leu Leu Lys Asn Ile Tyr Gln 65 70 75 80

Thr Phe Leu Arg Lys 85

<210> 17

<211> 152

<212> PRT

<213> Actinobacillus actinomycetemcomitans

<400> 17

Asp Arg Asn Lys Arg Ser Phe Tyr Ile Ser Ala Ala Arg Ser Glu Ile 1 5 10 15

Phe Asn Leu Ile Val Ala Lys Arg Ile Glu Leu Ser Leu Ala Gln Gln 20 25 30

Val Leu Asn Gly Asp Val Leu Gln Leu Asn Gly Ser His Ser Trp Phe 35 40 45

Val Ala Asp Ala Ser Glu Asp Leu Thr Gln Leu Gln Gln Arg Leu Ala 50 55 60

Gln Arg Asp Ile Leu Leu Thr Ala Pro Leu Ile Gly Glu Glu Asp Lys
65 70 75 80

Ser Ala Val Asp Phe Glu Asn Glu Ile Phe Val Ala His Gln Ala Leu 85 90 95

Phe His Leu Met Arg Gln Glu Arg Val Lys Ala Ala Arg Arg Pro Ile 100 105 110

Leu Met Gln Ala Gln Gln Phe Gln Trp Gln Phe Glu Pro Asn Gly Leu 115 120 125

Arg Leu Lys Phe Tyr Leu Pro Ala Gly Ser Tyr Ala Thr Ala Leu Val 130 135 140

Arg Glu Leu Val Asn Val Glu Asn 145 150

<210> 18

<211> 198

<212> PRT

<213> Actinobacillus actinomycetemcomitans

<220>

<221> UNSURE

<222> (43)

<223> Xaa stands for any amino acid.

<220>

<221> UNSURE

<222> (50)

```
<223> Xaa stands for any amino acid.
<220>
<221> UNSURE
<222> (59)
<223> Xaa stands for any amino acid.
<220>
<221> UNSURE
<222> (66)
<223> Xaa stands for any amino acid.
<220>
<221> UNSURE
<222> (69)
<223> Xaa stands for any amino acid.
<400> 18
Met Asn Ile Leu Leu Ser Asn Asp Asp Gly Ile His Ala Pro Gly Ile
                  5
Arg Val Met Arg Thr Leu Arg Lys Ile Ala Asn Val Thr Ile Val Ala
Pro Asp Ser Asn Arg Lys Arg Leu Gln Xaa Leu Asn Leu Gly Glu
Ala Xaa Val Phe Arg Ser Phe Gly Lys Ala Xaa Ile Ile Ala Ser Thr
     50
Ala Xaa Pro Ala Xaa Cys Val His Ile Ala Leu Thr Gly Phe Leu Ser
Gly Arg Ile Asp Leu Val Ile Ser Gly Ile Asn Ala Gly Ala Asn Leu
Gly Asp Asp Val Leu Tyr Ser Gly Thr Val Ala Ala Ala Phe Glu Gly
            100
Arg His Leu Gly Leu Pro Ser Ile Ala Val Ser Leu Asp Gly Arg Gln
His Phe Glu Thr Ala Ala Arg Val Val Cys Asp Leu Val Pro Lys Leu
    130
                        135
His Ala Gln Leu Leu Gly Lys His Glu Ile Leu Asn Ile Asn Val Pro
145
                    150
Asp Val Pro Tyr Glu Glu Leu Lys Gly Ile Lys Val Cys His Leu Gly
                                    170
Tyr Arg Ser Ser Ala Ser Glu Val Ile Lys Gln Gln Ser Pro Arg Gly
```

Glu Asp Met Tyr Trp Ile 195

180

```
<210> 19
```

<211> 142

<212> PRT

<213> Actinobacillus actinomycetemcomitans

<400> 19

Asp Leu Pro Leu Ala Asn Pro Tyr Glu Met Leu Ile Leu Ala Ser Ile 1 5 10 15

Val Glu Lys Glu Thr Gly Ile Ala Ala Glu Arg Pro Gln Val Ala Ser 20 25 30

Val Phe Ile Asn Arg Leu Lys Ala Lys Met Lys Leu Gln Thr Asp Pro 35 40 45

Thr Val Ile Tyr Gly Met Gly Asp Asp Tyr Asn Gly Asn Ile Arg Lys 50 55 60

Lys Asp Leu Glu Thr Pro Thr Pro Tyr Asn Thr Tyr Val Ile Asp Gly 65 70 75 80

Leu Pro Pro Thr Pro Ile Ala Met Pro Ser Glu Glu Ala Leu Gln Ala 85 90 95

Val Ala His Pro Ala Gln Thr Ala Phe Tyr Tyr Phe Val Ala Asp Gly
100 105 110

Thr Gly Gly His Lys Phe Ser Arg Asn Leu Asn Glu His Asn Lys Ala 115 120 125

Val Gln Gln Tyr Leu Arg Trp Tyr Arg Glu Gln Asn Gly Lys 130 135 140

<210> 20

<211> 54

<212> PRT

<213> Actinobacillus actinomycetemcomitans

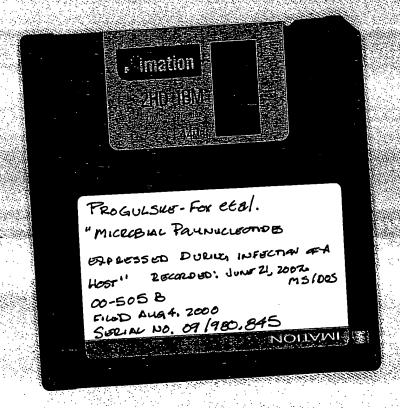
<400> 20

Met Val Gly Lys Phe Ile Val Ile Glu Gly Leu Glu Gly Ala Gly Lys
1 5 10 15

Ser Thr Ala His Gln Cys Val Val Asp Thr Leu Lys Thr Leu Gly Val 20 25 30

Gly Glu Val Ile Ser Thr Arg Glu Pro Gly Gly Thr Pro Val Gly Gly
35 40 45

Lys Ala Thr Pro Ser His 50



BEST AVAILABLE COPY

S/N 09/980,845 Patents and Trademarks Hon. Commissioner of

Re: Applicant - Progulske-Fox

LMWH

Atty

Case No. 00-505-B

Microbial Polynucleotides Expressed During Infection Of A Host

Sir:

Please place the Patent Office receipt stamp hereon and mail to acknowledge receipt of:

Transmittal Letter

Other Response to Notice of Defective Response; Sequence listing (computer readable

copy and written copy)

Fee Enclosed

\$ -0-June 24, 2002

Respectfully, McDonnell Boehnen Hulbert & Berghoff Attorney for Applicant

BEST AVAILABLE COPY



Hon. Commissioner of Patents and Trademarks

S/N 09/980,845

LMWH

Atty

Re: Applicant - Progulske-Fox

Case No. 00-505-B

Microbial Polynucleotides Expressed During Infection Of A Host

525 Recident 01 JUL 2002

Please place the Patent Office receipt stamp hereon and mail to acknowledge receipt of:

Sir:

Transmittal Letter

 ☐ Transmittal Letter
 ☐ Other Response to Notice of Defective Response; Sequence listing (computer readable of Defective Response) copy and written copy)

Respectfully,
McDonnell Boehnen Hulbert & Berghoff
Attorney for Applicant

Fee Enclosed

\$ -0-June 24, 2002



UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

U.S. APPLICATION NUMBER NO. FIRST NAMED APPLICANT ATTY. DOCKET NO.

09/980,845 Ann Progulske-Fox 00-505-B

INTERNATIONAL APPLICATION NO.

PCT/US00/21340

Lisa M.W. Hillman McDonnell Boehnen Hulbert & Berghoff 300 S Wacker Drive Suite 3200 Chicago, IL 60606 1.A. FILING DATE PRIORITY DATE 08/04/2000 08/06/1999

CONFIRMATION NO. 3701
371 FORMALITIES LETTER

OC0000000008256428

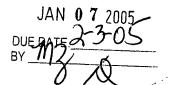
Date Mailed: 01/03/2005

NOTIFICATION OF DEFECTIVE RESPONSE

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as a Designated / Elected Office (37 CFR 1.495)

- Indication of Small Entity Status
- Priority Document
- Copy of the International Application filed on 11/15/2001
- Copy of the International Search Report filed on 11/15/2001
- Copy of IPE Report filed on 04/08/2002
- Information Disclosure Statements filed on 04/08/2002
- Biochemical Sequence Diskette filed on 04/08/2002
- Oath or Declaration filed on 04/08/2002
- Biochemical Sequence Listing filed on 04/08/2002
- Small Entity Statement filed on 11/15/2001
- Request for Immediate Examination filed on 11/15/2001
- Copy of references cited in ISR filed on 11/15/2001
- U.S. Basic National Fees filed on 11/15/2001

DOCKETED



Applicant's response filed 04/08/2002 is hereby acknowledged. The following requirements set forth in the NOTIFICATION of MISSING REQUIREMENTS mailed 02/28/2002 have not been completed.

/

Applicant is required to complete the response within a time limit of ONE MONTH from the date of this Notification or within the time remaining in the response set forth in the Notification of Missing Requirements, whichever is the longer. No extension of this time limit may be granted under 37 CFR 1.136, but the period for response set in the Notification of Missing Requirements may be extended under 37 CFR 1.136(a).

The following items **MUST** be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

The following items **MUST** be furnished within the period set forth below:

- The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 CFR 1.821-1.825 for the following reason(s):
 - A copy of the "Sequence Listing" in computer readable form has been submitted. The content of the computer readable form, however, does not comply with the requirements of Annex C of the Administrative Instructions and 37 CFR 1.822 and/or 1.832, as indicated on the attached marked-up copy of the "Raw Sequence Listing."
 - The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A substitute computer readable form must be submitted as required by 37 CFR 1.825(d).
 - APPLICANT MUST PROVIDE:
 - An initial or substitute computer readable form (CRF) of the "Sequence Listing."
 - An initial or substitute paper copy or compact disc of the "Sequence Listing," as well as an amendment directing its entry into the specification.
- For questions regarding compliance to 37 CFR 1.821-1.825 requirements, please contact:
 - For Rules Interpretation, call (703) 308-4216
 - To Purchase Patentin Software, call (703) 306-2600
 - For Patentln Software Program Help, call (703) 306-4119 or e-mail at patin21help@uspto.gov or patin3help@uspto.gov

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

A copy of this notice **MUST** be returned with the response.

VONDA M WALLACE

Telephone: (703) 305-3736

PART 1 - ATTORNEY/APPLICANT COPY

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY DOCKETNO
		ATTY. DOCKET NO.
09/980,845	PCT/US00/21340	00-505-B

FORM PCT/DO/EO/916 (371 Formalities Notice)



McDonnell Boehnen Hulbert & Berghoff

URGENT

Fax transmittal

Company

Examiner Vonda M. Wallace

USPTO

703 746 6711 Fax

Phone

Pages, with cover

Date From January 24, 2005 Lisa M.W. Hillman, Ph.D.

Direct Email 312 935 2371 hillman@mbhb.com

C/M

665/

Dear Examiner Wallace:

This paper is filed in response to the notice of defective response issued in the abovementioned application on January 3, 2005. The notice states that the content of the computer readable form of the sequence listing does not comply with the sequence listing requirements and states that a marked-up copy of the raw sequence listing is attached to the notice. However, the marked-up copy of the raw sequence listing was not attached to the raw sequence listing. Applicants respectfully request that a copy of the marked-up sequence listing be sent to the undersigned at the Office's earliest convenience.

Thank you.



McDonnell Boehnen Hufbert & Berghoff Law Offices

URGENT

Fax transmittal

To Company Faz Phone

Pages. with co

Examiner Vonda M. Wallace USPTO 703 746 6711

Date From Direct Email

January 24, 2005 Lisa M.W. Hillman, Ph.D 312 935 2371 hillman@mbhb.com 665/ 6

Dear Examiner Wallace:

1

This paper is filed in response to the notice of defective response issued in the abovementioned application on January 3, 2005. The notice states that the content of the computer readable form of the sequence listing does not comply with the sequence listing requirements and states that a marked-up copy of the raw sequence listing is attached to the notice. However, the marked-up copy of the raw sequence listing was not attached to the raw sequence listing. Applicants respectfully request that a copy of the marked-up sequence listing be sent to the undersigned at the Office's earliest convenience.

Thank you. Lisa M.W. Hillman, Ph.D

300 South Wacker Drive 312 913 0001 phone Chicago, Itinois 6060G-6709 312 913 0002 fax www.mbbb.com

Please notify receptionist at 312 913 0001 if all pages are not received. If you received this fax in error, please notify us immediately by phone (collect) to arrange for return of the document.

This transmittal is strictly for delivery only to the person fisted above. It may contain confidential or privileged information, the disclosure of which is prohibited.

*** ZEND ZNCCEZZENF ***

1op:369

10

Pages sent

JAN-24 12:59

End time

184-24 12:58

Start time

10

Noc. pages

117037466711

14N-24 12:58

οŢ

Date

369

dot

: MCDONNELL BOEHNEN HULBERT & BERCHOFF

Fax number: +3129130002 : 14N-54-02 15:28

əmiT





IN THE UNITED STATES PATENT AND TRADEMARK OFFICE (Case No. 00-505-B)

In re Applic	cation of:		
Serial No.: Filed: For: Mic	gulske-Fox 09/980,845 August 4, 2000 robial Polynucleotides Expressed ing Infection of a Host	Examiner: To Be Assigned Group Art Unit: To Be Assigned History History	
Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450 TRANSMITTAL LETTER			
1. We are transmitting herewith the attached papers for the above-identified patent application:			
	▼ Transmittal letter (in duplicate);		

2. GENERAL AUTHORIZATION TO CHARGE OR CREDIT FEES: Please charge any additional fees or credit overpayment to Deposit Account No. 13-2490. A duplicate copy of this sheet is enclosed.

Response to Notice of Defective Response;
Copy of Notification of Defective Response;

Paper copy of sequence listing; Diskette of sequence listing; Return Receipt Postcard

3. CERTIFICATE OF MAILING UNDER 37 CFR §1.8: The undersigned hereby certifies that this Transmittal Letter and the paper described in paragraph 1, are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on February 3, 2005.

Dated: February 3, 2005

Bv:

Reg. No. 43,673

MAR 2 0 2006 MAR 2 0 2006 In re A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of)
) Group Art Unit: TBA
Progulske-Fox) Examiner: TBA
Serial No. 09/980,845)
) Atty. Dckt. No.: 00-505-B
International Filing Date: Aug. 4, 2000) Intnl. Appl. No.: PCT/US00/21340
Priority Date: Aug. 6, 1999) mun. Appr. No 1 C 1/0300/21340
Priority Date: Aug. 0, 1999	,

For: MICROBIAL POLYNUCLEOTIDES EXPRESSED DURING INFECTION OF A HOST

RESPONSE TO NOTICE OF DEFECTIVE RESPONSE

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Dear Sir:

This paper is filed in response to the Notification of Defective Response mailed on January 3, 2005, in the above-mentioned case. It is believed that no fee is due in connection with this filing; however, if a fee is due please charge our deposit account number 13-2490.

The Notification of Defective Response stated that the computer readable copy was unreadable and also stated that errors found in the sequence listing were attached to the Notice. However, there was no attachment to the Notice. Applicants requested the attachment from Examiner Vonda Wallace on January 24, 2005 via phone and facsimile. However, the attachment to the Notice has not been received by Applicants. Applicants respectfully request that any errors in the sequence listing be brought to their attention at the Office's earliest convenience.

Enclosed is a written copy and a computer-readable copy of the sequence listing in the above mentioned case. The information recorded in computer readable form is identical to the written sequence listing. No new matter is added by the sequence listing. Applicants respectfully request that the specification of the application be amended by deleting the previously filed sequence listing and the entry of the enclosed sequence listing.

Date: 2/3/05

Respectfully submitted,

Lisa M.W. Hillman

Reg. No. 43,673

MCDONNELL, BOEHNEN, HULBERT & BERGHOFF 300 South Wacker Drive Chicago, IL 60606 (312) 913-0001

MAR 2 0 2006 SEQUENCE LISTING

Handfield, Martin Brady, Jeannine Progulske-Fox, Ann Hillman, Jeffrey D.

<120> Microbial Polynucleotides Expressed During Infection of a Host

<130> MBHB00-505B

<140>

<141>

<150> 60/147,551

<151> 1999-08-06

<150> PCT/US00/21340

<151> 2000-08-04

<160> 20

<170> PatentIn Ver. 2.1

<210> 1

<211> 849

<212> DNA

<213> Actinobacillus actinomycetemcomitans

<220>

<221> misc feature

<222> (566)

<223> N stands for any nucleotide.

<220>

<221> misc feature

<222> (625)

<223> N stands for any nucleotide.

<220>

<221> misc feature

<222> (627)

<223> N stands for any nucleotide.

<220>

<221> misc_feature

<222> (636)

<223> N stands for any nucleotide.

<220>

<221> misc_feature

<222> (650)

<223> N stands for any nucleotide.

<220>

<221> misc_feature

```
<222> (656)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (661)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (672)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (681)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (720)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (723)
<223> N stands for any nucleotide.
<400> 1
gatcgcgtaa acggtgtaac acggaaagca attgtttaat gtcggcaaaa tgcagccctg 60
tggtcggttc gtccagaata tacagggttt tgcccgtatc ccgtttggag agttccgtcg 120
ccagtttcac ccgttgcgct tccccgccgg acagggtggt agaggattgc cccaagcgaa 180
tataagacaa gcccacgtca atcagggttt gcaatttacg cgcaatcatt ggaatggcat 240
cgaaaaactc gcgcgcatct tccaccgtca tgtccagcac ctgatgaatg gttttacctt 300
tgtagcggat ttccagggtt tcgcgattgt aacgcttgcc tttacattgg tcgcaaggca 360
cgtacacatc gggcaggaag tgcatttcca ctttgattac gccgtcgccc tggcaggctt 420
acagegeeg cegegeacgt taaaactgaa acgeeeggg ttataacege gegeacggge 480
tttcggtacg ccggcaaaca attcgcgaat cggcgtgaat acgcccgtgt aagttgcccg 540
gttggagcgt ggcgtgcgtc caatcnggct ttggttaata tcaatacttt atcgaaaaat 600
tccaaacctt taatggactt gtacngngaa acctengeat tttetgeaen attaangegt 660
nttgtgcaat anggaacaaa ntgtcgttaa tcagtgtaga atttacctta accggacacn 720
congtgatgo aggtaaataa goocacggga atgtotaaat tgacgttttt caggttgtta 780
ccggaagcgc cgaacaattt gagcattttt ttcttatcaa gtgcggtacg ttttttcggt 840
                                                                   849
 atttcgatc
 <210> 2
 <211> 357
 <212> DNA
 <213> Actinobacillus actinomycetemcomitans
 <400> 2
 gatcactaag ttgttcaatc ctttcgcttg ggaatctttg tctaaatacg gtttatgttg 60
 cattgcgtta acgtctaaat cacctttaga cactgcagtg tttggcaagg cgtagtcatg 120
 aataaaacgt attctacgtc taagttgtat ttttcttttg ccactttcgc tgcgatttca 180
 gccacttggt gttccggtcc tgccatcacg cccactttga ttgttgccgg ggcttctgcc 240
 geeggtttgt etgeeggtge ggetteeggt tttttetett cattacaage eegttaagge 300
```

```
<210> 3
<211> 886
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (554)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (596)
<223> N stands for any nucleotide.
<400> 3
gatcaaactg gtggcgcaag ggcagcgcgt agcaaattta cccgatattt tggtctatgc 60
gcgcgtcggc aacggcatgg tagggcgacg ccgtggttta aaccaagcca aagcggaatg 120
gcgcttattt aagctaaaac accatcttgg cattcaggga tttttatccg ggctattcac 180
ttttgtcctg cgttccggtg ccagattatt gccgacatca ttactgaaaa acatctatca 240
aaccttttta agaaaataac atgatgaaat taaactgtat tttaaaaata tccggaattt 300
ccaccgcact tittctagcg ggttgttcct caaattcaag tgcgccgacg caatcctctg 360
agcaggcgaa ttctgttacg gctgtgaatc ccactgcggt gtacagtaag ccccgcactt 420
tggataactt caacgattat gtgaatttct taaaaggtaa agcagcggca gaaggcgttt 480
ctgccgacgt attgaatgca caaaataata ttaattatat tcaaaaatcc gtggatttgg 540
acgatcaaca agenggeaga attegeaage gtgatecaaa tgeecegeeg ateatnaatt 600
ccgaacggca cgaccaatta cttaaatcgt gtattaacca agaataaagt agacacggca 660
gaagcacgtt attgggaaca attgccgcag cttgaaaatg cttcaaagaa attcagcgta 720
ccgaaaaatt atctgttagc cttgtggggc atggagagta gctttggcta ttatcagggc 780
aattacgatg tgttatccac cttagccact cttgcttttg acggacgccg tgaagcctta 840
                                                                   886
ttcagcaaag aattcatcgc cgccatgaaa atgctacagc gcgatc
<210> 4
<211> 507
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (4)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (9)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (21)
<223> N stands for any nucleotide.
<220>
```

```
<221> misc_feature
<222> (23)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (29)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (32)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (35)..(36)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (39)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (42)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (45)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (49)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (52)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (58)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (61)..(62)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (65)
```

```
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (69)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (73)
<223> N stands for any polynucleotide.
<220>
<221> misc_feature
<222> (97)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (102)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (138)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (457)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (459)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (467)
<223> N stands for any nucleotide.
<400> 4
ttgntacent ageegetgae nanaactane angenntgna tnatntegna tnattaanat 60
nngcnaggng cancagctta cctttgccga cggttcnctg tntgaaagcg ccattcgcaa 120
agtgccggtg gaggcggnga aaattcactc acttggtgcg gaaggcaatg atgtgggatt 180
gaaagcccat catggcgggt ggataaagcg ttattttta tgtcggcaga tgcctttcct 240
gcgttaaatg cgttattaga cgaaaatttt tcgtatcagg acacagcagt ttacggcgag 300
aattttgtgg tttccgcgct gaatgaagat tccgtgtgtg tgggcgatat ttatcaaatc 360
ggctcctgcg tggtggaggt gtcgcagccg cgtaaacctt gtgagcgctt atcgaaaaat 420
accaataatc cgaacacgca acaaaccgtg tacgctncng ctggtcnggc tggtatgtgc 480
                                                                    507
cggtggtacc ccaaggggga aattcaa
 <210> 5
 <211> 1087
```

<212> DNA

```
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (622)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (642)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (661)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (669)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (685)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (690)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (700)
<223> N stands for any nucleotide.
gatcgcaaca agcgcagttt ctatatttcc gccgcccgca gtgagatttt caatttaatc 60
gttgccaaac gtattgaact cagtctggcg cagcaggtct taaatggaga cgttttgcaa 120
ctgaacggtt cgcacagttg gtttgtggcg gacgcatcgg aagatttgac gcaactgcaa 180
agtgcggtgg attttgagaa tgaaattttt gtcgcgcacc aagccttgtt ccatttgatg 300
cggcaagaac gcgtgaaagc cgcccgccgt ccgattttaa tgcaggcgca acagtttcaa 360
tggcaatttg aaccgaacgg tttgcgcctt aaattttatt tgccggcagg cagttacgcc 420
acggcgttgg tacgcgagct ggtgaatgtt gaaaactgaa aaacgagaag aaaaacagga 480
ataacaagaa catgaatatt ttattaagta acgatgacgg cattcacgcg ccgggcattc 540
qtqtqatggc agaacattgc gtaagattgc caatgtgacc atcgtcgcgc cggacagcaa 600
ccgcaagcgc cgccttcagt tncttaacct tggtgaagcc gntgtattcc gttcatttgg 660
naaagcggng attattgcgt caacngcacn cccggcggan tgcgtgcata ttgccctgac 720
gggttttctt tccgggcgca tcgatttggt gatttccggc atcaacgccg gggcgaacct 780
gggcgatgat gtgctatatt ccggcacggt cgcggcagca tttgaagggc gtcatctggg 840
cttgccgtct attgcggtat cgctcgatgg tcgtcaacat tttgaaacgg cggcgcgcgt 900
ggtatgcgat ttggtgccga aattacacgc ccaattatta ggcaaacacg aaattctgaa 960
tattaacgtg cccgatgtgc cttacgaaga actgaaaggc attaaagtgt gccatttggg 1020
ctaccgttct tccgcttctg aagtgattaa acagcaaagc ccgcgtggcg aagacatgta 1080
                                                                 1087
ttggatc
```

```
<210> 6
<211> 681
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (609)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (614)
<223> N stands for any nucleotide.
<220>
<221> misc_feature
<222> (651)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (665)
<223> N stands for any nucleotide.
<400> 6
gatctgccgt tggcgaaccc ttacgaaatg ctgatcctcg cgtccatcgt ggaaaaagaa 60
accggcattg ctgcagaacg cccacaagtg gcgtcggtat tcattaatcg gttaaaagcc 120
aaaatgaagc tgcaaaccga tccgaccgtc atttacggca tgggcgacga ctacaacggc 180
aatattegea aaaaagattt ggaaaegeea aegeettata acacetatgt gattgaegge 240
ttgccgccga caccgattgc gatgccgagt gaagaggcgt tacaggcggt ggcacatccg 300
gcgcaaacgg cgttttatta tttcgtggca gacggcacgg ggggacacaa attcagtcgt 360
aatttaaacg aacataacaa agcggtgcag caatatttgc gctggtaccg cgaacaaaac 420
ggaaaataat atggtaggca aatttattgt cattgaaggc ttggaaggcg caggcaaaag 480
caccgctcat caatgcgttg tggatacgtt aaaaacgtta ggtgttgggg aagtcatctc 540
taccegegag cegggeggea caccegttgg eggaaaaget acgecatete attaaacatg 600
aaaaccaana gccngtgacc cgataaagcg gaattactca tgctgtatgc ngccgcctgc 660
aattngtggg aaaatgtgat c
<210> 7
<211> 822
<212> DNA
<213> Actinobacillus actinomycetemcomitans
 <220>
 <221> misc feature
 <222> (532)
 <223> N stands for any nucleotide.
 <220>
 <221> misc feature
 <222> (630)
 <223> N stands for any nucleotide.
```

```
<220>
<221> misc feature
<222> (696)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (710)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (722)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (725)
<223> N stands for any nucleotide.
<400> 7
gatcgataaa aatcagcaag gcaaccactc ttaacaagaa ttgccatacc gtccaatatc 60
gtcgccaata ctgaatcgcg tagagcatgg ctaacgcaat catagcgcgt aaagtcggaa 120
tagcaagece egecagttgg etgtataaca aegcaaaaat gaateegcae agaateggaa 180
atgtcgggct gatgtaacgc gtcggcaagg caaattgcag tagacgcgcc aaggtaaaac 240
ccagcatcat cgccagtccg atatgcagcc ctgaaatggc aattaaatgc gccgtatttg 300
ttttttgata aatttgccaa gttttttggt ctaagcggaa acgttcgcca aaaccgagtg 360
ccagcaacaa gccttgtcgg ggtaaattct ccgtttgttg taaggcttga ttgagagcgg 420
tttggcgtaa cgaaaaaacg ttttccaatt tgaccgcact tttaatctct gcccaagcgg 480
tgatgtgctt gccgaaatac catggctggc ggtcaaaacc gtcaaaattc angcgggaag 540
aaagcgctcg caagcgtaaa ttgcctgcgt aacgttcgcc cggggttgac tggttgcttg 600
agtttccatt gcgcgtaaat acgttgttcn gggaagattt tcggcgaagt tttggcgccg 660
aataacccag gggttggata atgctgctga tgccanaaat ttccttgacn ggtaaatttc 720
enggnggaac gggttttegg eggeagattg geaagattat eegeetgggt eagtatggaa 780
                                                                   822
attgccgatt ggtggacgta agcggactga atcatcaaga tc
<210> 8
<211> 949
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<220>
<221> misc feature
<222> (538)
<223> N stands for any nucleotide.
<400> 8
gatcaggttg ccgtaaccgc gtaaggcgtt acccgcgtaa accactcgac ctgcggcggc 60
ggcattgact gcttgtctgc gagaaccact gatgtcgatg cctttgttac cgccgtcggc 120
gttagagaaa ccttgaatca cattgccgtt ggtcggccag cgccatgcca cgttggatac 180
tgccggtgcg gtgcccgctt gggttatcgg ctgattggtt gccggtgcag cagtacctac 240
geeggettta ategggeegg taategtgee gteggaacea tattgtgtge egtttgegee 300
cggggtgtaa gttacggtcg gttcaccacc ttgcgtagcc ggttgggtga ccgtcggttg 360
catttgcggt gcagctttcg tttgcaccgt aaccgttgtg ccgcggctca cctttaaggt 420
ttgtccgacg cttaagctgt aaggttcgga catattattc aacgccgcca attctttcac 480
atccaaacca gaaatgtagg cgataaggaa catggtgtca cctttgcgta cggtatangt 540
```

```
ttcacctttg tagaaacctt tgttgatttg gctgtaatcc ggtgcgttag tggtcgggtt 600
acctggaatg gtgaaatctt gggatgcctg ttgcgggtga attttccccg gcaggttggg 660
tttgcttaac ccggttgtgc tttgcaatgc aaactgttga tacatcggtt gaaaaatcgg 720
ctgcggagta gattgtgcgc cggtcgcctg tagattgttc gactgggcaa tcggaccgtt 780
categaageg ggtacattgc cttgttggat ttgcggttcc catgtgctat tgccgccatc 840
ggttgaaccg tccaccggtt gcatgagtcc cggggataag gtaccgtcgg cgttttccac 900
cggtgccggt gtattcgaag tacaggccgc taacacggca atgctgatc
<210> 9
<211> 277
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 9
agagaaaaaa ccggaagccg caccggcaga caaaccggcg gcagaagccc cggcaacaat 60
caaagtgggc gtgatggcag gaccggaaca ccaagtggct gaaatcgcag cgaaagtggc 120
aaaagaaaaa tacaacttag acgtagaata cgttttattc atgactacgc cttgccaaac 180
actgcagtgt ctaaaggtga tttagacgtt aacgcaatgc aacataaacc gtatttagac 240
                                                                277
aaagattccc aagcgaaagg attgaacaac ttagtga.
<210> 10
<211> 259
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 10
gatcaaactg gtggcgcaag ggcagcgcgt agcaaattta cccgatattt tggtctatgc 60
gegegtegge aacggeatgg tagggegacg cegtggttta aaccaageca aageggaatg 120
gcgcttattt aagctaaaac accatcttgg cattcaggga tttttatccg ggctattcac 180
ttttgtcctg cgttccggtg ccagattatt gccgacatca ttactgaaaa acatctatca 240
                                                                 259
aacctttta agaaaataa
<210> 11
<211> 459
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 11
qatcgcaaca agcgcagttt ctatatttcc gccgcccgca gtgagatttt caatttaatc 60
gttgccaaac gtattgaact cagtctggcg cagcaggtct taaatggaga cgttttgcaa 120
ctgaacggtt cgcacagttg gtttgtggcg gacgcatcgg aagatttgac gcaactgcaa 180
agtgcggtgg attttgagaa tgaaattttt gtcgcgcacc aagccttgtt ccatttgatg 300
cggcaagaac gcgtgaaagc cgcccgccgt ccgattttaa tgcaggcgca acagtttcaa 360
tggcaatttg aaccgaacgg tttgcgcctt aaattttatt tgccggcagg cagttacgcc 420
acggcgttgg tacgcgagct ggtgaatgtt gaaaactga
 <210> 12
 <211> 596
 <212> DNA
 <213> Actinobacillus actinomycetemcomitans
 <220>
```

```
<221> misc feature
<222> (131)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (151)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (170)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (178)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (194)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (199)
<223> N stands for any nucleotide.
<220>
<221> misc feature
<222> (209)
<223> N stands for any nucleotide.
<400> 12
atgaatattt tattaagtaa cgatgacggc attcacgcgc cgggcattcg tgtgatggca 60
gaacattgcg taagattgcc aatgtgacca tcgtcgcgcc ggacagcaac cgcaagcgcc 120
gccttcagtt ncttaacctt ggtgaagccg ntgtattccg ttcatttggn aaagcggnga 180
ttattgcgtc aacngcacnc ccggcggant gcgtgcatat tgccctgacg ggttttcttt 240
ccqqqcqcat cgatttggtg atttccggca tcaacgccgg ggcgaacctg ggcgatgatg 300
tgctatattc cggcacggtc gcggcagcat ttgaagggcg tcatctgggc ttgccgtcta 360
ttgcggtatc gctcgatggt cgtcaacatt ttgaaacggc ggcgcgcgtg gtatgcgatt 420
tggtgccgaa attacacgcc caattattag gcaaacacga aattctgaat attaacgtgc 480
ccgatgtgcc ttacgaagaa ctgaaaggca ttaaagtgtg ccatttgggc taccgttctt 540
ccgcttctga agtgattaaa cagcaaagcc cgcgtggcga agacatgtat tggatc
<210> 13
<211> 429
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 13
gatctgccgt tggcgaaccc ttacgaaatg ctgatcctcg cgtccatcgt ggaaaaagaa 60
accggcattg ctgcagaacg cccacaagtg gcgtcggtat tcattaatcg gttaaaagcc 120
aaaatgaagc tgcaaaccga tccgaccgtc atttacggca tgggcgacga ctacaacggc 180
aatattcgca aaaaagattt ggaaacgcca acgccttata acacctatgt gattgacggc 240
```

```
ttgccgccga caccgattgc gatgccgagt gaagaggcgt tacaggcggt ggcacatccg 300
gcgcaaacgg cgttttatta tttcgtggca gacggcacgg ggggacacaa attcagtcgt 360
aatttaaacg aacataacaa agcggtgcag caatatttgc gctggtaccg cgaacaaaac 420
ggaaaataa
<210> 14
<211> 162
<212> DNA
<213> Actinobacillus actinomycetemcomitans
<400> 14
atggtaggca aatttattgt cattgaaggc ttggaaggcg caggcaaaag caccgctcat 60
caatgcgttg tggatacgtt aaaaacgtta ggtgttgggg aagtcatctc tacccgcgag 120
ccgggcggca cacccgttgg cggaaaagct acgccatctc at
<210> 15
<211> 67
<212> PRT
<213> Actinobacillus actinomycetemcomitans
<400> 15
Glu Lys Lys Pro Glu Ala Ala Pro Ala Asp Lys Pro Ala Ala Glu Ala
Pro Ala Thr Ile Lys Val Gly Val Met Ala Gly Pro Glu His Gln Val
                                                      30
                                  25
Ala Glu Ile Ala Ala Lys Val Ala Lys Glu Lys Tyr Asn Leu Asp Val
         35
Glu Tyr Val Leu Phe Met Thr Thr Pro Cys Gln Thr Leu Gln Cys Leu
Lys Val Ile
 65
<210> 16
<211> 85
<212> PRT
 <213> Actinobacillus actinomycetemcomitans
 <400> 16
Ile Lys Leu Val Ala Gln Gly Gln Arg Val Ala Asn Leu Pro Asp Ile
Leu Val Tyr Ala Arg Val Gly Asn Gly Met Val Gly Arg Arg Arg Gly
              20
 Leu Asn Gln Ala Lys Ala Glu Trp Arg Leu Phe Lys Leu Lys His His
 Leu Gly Ile Gln Gly Phe Leu Ser Gly Leu Phe Thr Phe Val Leu Arg
                          55
```

50

```
Ser Gly Ala Arg Leu Leu Pro Thr Ser Leu Leu Lys Asn Ile Tyr Gln
 65
Thr Phe Leu Arg Lys
<210> 17
<211> 152
<212> PRT
<213> Actinobacillus actinomycetemcomitans
<400> 17
Asp Arg Asn Lys Arg Ser Phe Tyr Ile Ser Ala Ala Arg Ser Glu Ile
Phe Asn Leu Ile Val Ala Lys Arg Ile Glu Leu Ser Leu Ala Gln Gln
                                  25
Val Leu Asn Gly Asp Val Leu Gln Leu Asn Gly Ser His Ser Trp Phe
Val Ala Asp Ala Ser Glu Asp Leu Thr Gln Leu Gln Gln Arg Leu Ala
                         55
Gln Arg Asp Ile Leu Leu Thr Ala Pro Leu Ile Gly Glu Glu Asp Lys
Ser Ala Val Asp Phe Glu Asn Glu Ile Phe Val Ala His Gln Ala Leu
                 85
Phe His Leu Met Arg Gln Glu Arg Val Lys Ala Ala Arg Arg Pro Ile
                                 105
            100
Leu Met Gln Ala Gln Gln Phe Gln Trp Gln Phe Glu Pro Asn Gly Leu
                             120
Arg Leu Lys Phe Tyr Leu Pro Ala Gly Ser Tyr Ala Thr Ala Leu Val
                         135
    130
Arg Glu Leu Val Asn Val Glu Asn
                     150
<210> 18
<211> 198
<212> PRT
<213> Actinobacillus actinomycetemcomitans
<220>
<221> UNSURE
<222> (43)
<223> Xaa stands for any amino acid.
<220>
<221> UNSURE
```

<222> (50)

```
<223> Xaa stands for any amino acid.
<220>
<221> UNSURE
<222> (59)
<223> Xaa stands for any amino acid.
<220>
<221> UNSURE
<222> (66)
<223> Xaa stands for any amino acid.
<220>
<221> UNSURE
<222> (69)
<223> Xaa stands for any amino acid.
<400> 18
Met Asn Ile Leu Leu Ser Asn Asp Asp Gly Ile His Ala Pro Gly Ile
Arg Val Met Arg Thr Leu Arg Lys Ile Ala Asn Val Thr Ile Val Ala
                                 25
Pro Asp Ser Asn Arg Lys Arg Arg Leu Gln Xaa Leu Asn Leu Gly Glu
Ala Xaa Val Phe Arg Ser Phe Gly Lys Ala Xaa Ile Ile Ala Ser Thr
Ala Xaa Pro Ala Xaa Cys Val His Ile Ala Leu Thr Gly Phe Leu Ser
                                          75
Gly Arg Ile Asp Leu Val Ile Ser Gly Ile Asn Ala Gly Ala Asn Leu
Gly Asp Asp Val Leu Tyr Ser Gly Thr Val Ala Ala Ala Phe Glu Gly
                                105
Arg His Leu Gly Leu Pro Ser Ile Ala Val Ser Leu Asp Gly Arg Gln
                            120
        115
His Phe Glu Thr Ala Ala Arg Val Val Cys Asp Leu Val Pro Lys Leu
                        135
His Ala Gln Leu Leu Gly Lys His Glu Ile Leu Asn Ile Asn Val Pro
                                         155
Asp Val Pro Tyr Glu Glu Leu Lys Gly Ile Lys Val Cys His Leu Gly
                                                         175
                165
Tyr Arg Ser Ser Ala Ser Glu Val Ile Lys Gln Gln Ser Pro Arg Gly
                                                     190
            180
                                 185
Glu Asp Met Tyr Trp Ile
```

195

```
<210> 19
```

<211> 142

<212> PRT

<213> Actinobacillus actinomycetemcomitans

<400> 19

Asp Leu Pro Leu Ala Asn Pro Tyr Glu Met Leu Ile Leu Ala Ser Ile 1 5 10 15

Val Glu Lys Glu Thr Gly Ile Ala Ala Glu Arg Pro Gln Val Ala Ser 20 25 30

Val Phe Ile Asn Arg Leu Lys Ala Lys Met Lys Leu Gln Thr Asp Pro 35 40 45

Thr Val Ile Tyr Gly Met Gly Asp Asp Tyr Asn Gly Asn Ile Arg Lys
50 - 55 60

Lys Asp Leu Glu Thr Pro Thr Pro Tyr Asn Thr Tyr Val Ile Asp Gly 65 70 75 80

Leu Pro Pro Thr Pro Ile Ala Met Pro Ser Glu Glu Ala Leu Gln Ala 85 90 95

Val Ala His Pro Ala Gln Thr Ala Phe Tyr Tyr Phe Val Ala Asp Gly
100 105 110

Thr Gly Gly His Lys Phe Ser Arg Asn Leu Asn Glu His Asn Lys Ala 115 120 125

Val Gln Gln Tyr Leu Arg Trp Tyr Arg Glu Gln Asn Gly Lys 130 135 140

<210> 20

<211> 54

<212> PRT

<213> Actinobacillus actinomycetemcomitans

<400> 20

Met Val Gly Lys Phe Ile Val Ile Glu Gly Leu Glu Gly Ala Gly Lys
1 5 10 15

Ser Thr Ala His Gln Cys Val Val Asp Thr Leu Lys Thr Leu Gly Val 20 25 30

Gly Glu Val Ile Ser Thr Arg Glu Pro Gly Gly Thr Pro Val Gly Gly 35 40 45

Lys Ala Thr Pro Ser His

50



United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Addres: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Vignia 22313-1450 www.uspto.gov

ATTY. DOCKET NO. FIRST NAMED APPLICANT U.S. APPLICATION NUMBER NO. 00-505-B Ann Progulske-Fox 09/980,845

INTERNATIONAL APPLICATION NO.

PCT/US00/21340

LA. FILING DATE PRIORITY DATE

08/04/2000

08/06/1999

Lisa M.W. Hillman McDonnell Boehnen Hulbert & Berghoff 300 S Wacker Drive Suite 3200 Chicago, IL 60606

CONFIRMATION NO. 3701 371 FORMALITIES LETTER *OC000000008256428*

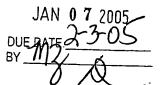
Date Mailed: 01/03/2005

NOTIFICATION OF DEFECTIVE RESPONSE

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as a Designated / Elected Office (37 CFR 1.495)

- Indication of Small Entity Status
- Priority Document
- Copy of the International Application filed on 11/15/2001
- Copy of the International Search Report filed on 11/15/2001
- Copy of IPE Report filed on 04/08/2002
- Information Disclosure Statements filed on 04/08/2002
- Biochemical Sequence Diskette filed on 04/08/2002
- Oath or Declaration filed on 04/08/2002
- Biochemical Sequence Listing filed on 04/08/2002
- Small Entity Statement filed on 11/15/2001
- Request for Immediate Examination filed on 11/15/2001
- Copy of references cited in ISR filed on 11/15/2001
- U.S. Basic National Fees filed on 11/15/2001

DOCKETED



Applicant's response filed 04/08/2002 is hereby acknowledged. The following requirements set forth in the NOTIFICATION of MISSING REQUIREMENTS mailed 02/28/2002 have not been completed.

Applicant is required to complete the response within a time limit of ONE MONTH from the date of this Notification or within the time remaining in the response set forth in the Notification of Missing Requirements, whichever is the longer. No extension of this time limit may be granted under 37 CFR 1.136, but the period for response set in the Notification of Missing Requirements may be extended under 37 CFR 1.136(a).

The following items MUST be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

The following items MUST be furnished within the period set forth below:

- The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 CFR 1.821-1.825 for the following reason(s):
 - A copy of the "Sequence Listing" in computer readable form has been submitted. The content of the computer readable form, however, does not comply with the requirements of Annex C of the Administrative Instructions and 37 CFR 1.822 and/or 1.832, as indicated on the attached marked-up copy of the "Raw Sequence Listing."
 - The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A substitute computer readable form must be submitted as required by 37 CFR 1.825(d).
 - APPLICANT MUST PROVIDE:
 - An initial or substitute computer readable form (CRF) of the "Sequence Listing."
 - An initial or substitute paper copy or compact disc of the "Sequence Listing," as well as an amendment directing its entry into the specification.
- For questions regarding compliance to 37 CFR 1.821-1.825 requirements, please contact:
 - For Rules Interpretation, call (703) 308-4216
 - To Purchase Patentin Software, call (703) 306-2600
 - For Patentin Software Program Help, call (703) 306-4119 or e-mail at patin21help@uspto.gov or patin3help@uspto.gov

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

A copy of this notice **MUST** be returned with the response.

VONDA M WALLACE

Telephone: (703) 305-3736

PART 1 - ATTORNEY/APPLICANT COPY

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY. DOCKET NO.
09/980.845	PCT/US00/21340	00-505-B

FORM PCT/DO/EO/916 (371 Formalities Notice)

STIC Biotechnology Systems Branch

RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number:

Source

Date Processed by STIC:

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, TELEPHONE: 571-272-2510; FAX: 571-273-0221

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 4.4.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

http://www.uspto.gov/web/offices/pac/checker/chkrnote.htm

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

- 1. EFS-Bio (http://www.uspto.gov/ebc/efs/downloads/documents.htm, EFS Submission User Manual ePAVE)
- 2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
- Hand Carry, Federal Express, United Parcel Service, or other delivery service (EFFECTIVE 01/14/05):
 U.S. Patent and Trademark Office, Mail Stop Sequence, Customer Window, Randolph Building, 401 Dulany Street, Alexandria, VA 22314

Revised 01/10/06



DATE: 01/18/2006

TIME: 15:36:00

IFWP

Input Set : A:\seqlistcorrected.2002.06.21.txt Output Set: N:\CRF4\01182006\1980845A.raw 3 <110> APPLICANT: Handfield, Martin Brady, Jeannine 5 Progulske-Fox, Ann Hillman, Jeffrey D. 6 8 <120> TITLE OF INVENTION: Microbial Polynucleotides Expressed During Infection of 9 a Host 11 <130> FILE REPERENCE: MBHB00-505B C--> 13 <140> CURRENT APPLICATION NUMBER: US/09/980,845A C--> 14 <141> CURRENT FILING DATE: 2001-11-15 16 <150> PRIOR APPLICATION NUMBER: 60/147,551 17 <151> PRIOR FILING DATE: 1999-08-06 19 <150> PRIOR APPLICATION NUMBER: PCT/US00/21340 Does Not Comply 20 <151> PRIOR FILING DATE: 2000-08-04 Corrected Diskette Needed 22 <160> NUMBER OF SEQ ID NOS: 20 24 <170> SOPTWARE: PatentIn Ver. 2.1 26 <210> SEQ ID NO: 1 27 <211> LENGTH: 849 28 <212> TYPE: DNA 29 <213> ORGANISM: Actinobacillus actinomycetemcomitans 31 <220> PEATURE: 32 <221> NAME/KEY: misc feature 33 <222> LOCATION: (566) 34 <223> OTHER INPORMATION: N stands for any nucleotide. 36 <220> FEATURE: 37 <221> NAME/KEY: misc_feature 36 <222> LOCATION: (625) 39 <223> OTHER INFORMATION: N stands for any nucleotide. 41 <220> PEATURE: 42 <221> NAME/KBY: misc_feature 43 <222> LOCATION: (627) 44 <223> OTHER INPORMATION: N stands for any nucleotide. 46 <220> FEATURE: 47 <221> NAME/KEY: misc_feature 48 <222> LOCATION: (636) 49 <223> OTHER INFORMATION: N stands for any nucleotide. 51 <220> FEATURE: 52 <221> NAME/KBY: misc_feature 53 <222> LOCATION: (650) 54 <223> OTHER INFORMATION: N stands for any nucleotide. 56 <220> FEATURE: 57 <221> NAME/KRY: misc feature 58 <222> LOCATION: (656) 59 <223> OTHER INFORMATION: N stands for any nucleotide.

RAW SECURNCE LISTING

PATENT APPLICATION: US/09/980.845A

. -6- - - -

RAW SEQUENCE LISTING DATE: 01/18/2006
PATENT APPLICATION: US/09/980,845A TIME: 15:36:00

Imput Set: A:\seqlistcorrected.2002.06.21.txt
Output Set: N:\CRP4\01182006\1980845A.raw

```
61 <220> PEATURE:
    62 <221> NAME/KEY: misc_feature
    63 <222> LOCATION: (661)
    64 <223> OTHER INPORMATION: N stands for any nucleotide.
    66 <220> FEATURE:
    67 <221> NAME/KEY: misc_feature
    68 <222> LOCATION: (672)
    69 <223> OTHER INFORMATION: N stands for any nucleotide.
    71 <220> FEATURE:
    72 <221> NAME/KEY: misc feature
    73 <222> LOCATION: (681)
    74 <223> OTHER INFORMATION: N stands for any nucleotide.
    76 <220> FEATURE:
    77 <221> NAME/KEY: misc feature
    78 <222> LOCATION: (720)
    79 <223> OTHER INFORMATION: N stands for any nucleotide.
    81 <220> PEATURE:
    82 <221> NAME/KEY: misc feature
    83 <222> LOCATION: (723)
     84 <223> OTHER INFORMATION: N stands for any nucleotide.
     86 <400> SEQUENCE: 1
    87 gatogogtaa acggtgtaac acggamagca attgtttaat gtoggcaaaa tgcagcoctg 60
     88 tagtogetto georgaata tacagggett tagoogtato cogetteggag agettoogtog 120
     89 ccagtttcac ccgttgcgct tccccgccgg acagggtggt agaggattgc cccaagcgaa 180
     90 tataagacaa geecaegtea ateagggttt geaatttaeg egeaateatt ggaatggeat 240
     91 cgaaaaactc gcgcgcatct tccaccgtca tgtccagcac ctgatgaatg gtttacctt 300
     92 tgtageggat ttecagggtt tegegattgt aacgettgee tttacattgg tegeaaggea 360
     93 ogtacacate gggcaggaag tgcattteca etttgattae geogtegeee tggcaggett 420
     94 acagegeeeg eegegeaegt taaaaetgaa acgeeeeggg ttataacege gegeaeggge 480
     95 ttteggtacq ccqccaacca attcgcgaat cggcgtgaat acgcccgtgt aagttgcccg 540
W--> 96 gttggaggt ggcgtgcgtc caatengget ttggttaata tcaatacttt atcgaaaaat 600
     97 techaacett taatggaett gtaengngaa acetengeat treetgeach attaangegt 660
     98 nttgtgcaat anggaacaaa ntgtcgttaa tcagtgtaga atttacctta accggacacn 720
     99 congtgatgo uggtanatan goodacggga atgtotanat tgacgttttt caggttgtta 780
     100 ccqqaaqqqc cqaacaattt qaqcattttt ttcttatcaa gtgoggtacg ttttttcggt 840
     101 atttcgatc
     104 <210> SEQ ID NO: 2
     105 <211> LENGTH: 357
     106 <212> TYPE: DNA
     107 <213> ORGANISM: Actinobacillus actinomycetemcomitans
     109 <400> SEQUENCE: 2
     110 gatcactang ttgttcaatc ctttcgcttg ggaatctttg tctanatacg gtttatgttg 60
     111 cattgcgtta acgtctaaat cacctttaga cactgcagtg tttggcaagg cgtagtcatg 120
     112 aataaaacgt attetacgte taagttgtat ttttettttg ccactttege tgegatttea 180
     113 gccacttggt gttccggtcc tgccatcacg cccactttga ttgttgccgg ggcttctgcc 240
     114 geoggttigt etgeeggige ggetteeggt tittetett cattacaage cegttaagge 300
     115 gastacggag gctaatgttg cgacgcctss tastttttt casgttcats asagatc
     11B <210> SEQ ID NO: 3
     119 <211> LENGTH: 006
```

RAW SEQUENCE LISTING DATE: 01/18/2006
PATENT APPLICATION: US/09/980,845A TIME: 15:36:00

Input Set: A:\seqlistcorrected.2002.06.21.txt
Cutput Set: N:\CRF4\01182006\1980845A.raw

```
61 <220> FRATURE:
    62 <221> NAME/KEY: misc_feature
    63 <222> LOCATION: (661)
    64 <2235 OTHER INFORMATION: N stands for any nucleotide.
    66 <220> PEATURE:
    67 <221> NAME/KEY: misc_feature
    68 <222> LOCATION: (672)
    69 <223> OTHER INFORMATION: N stands for any nucleotide.
    71 <220> PEATURE:
    72 <221> NAME/KEY: misc_feature
    73 <222> LOCATION: (681)
    74 <223> OTHER INFORMATION: N stands for any nucleotide.
    76 <220> PEATURE:
    77 <221> NAME/KEY: misc_feature
    78 <222> LOCATION: (720)
    79 <223> OTHER INFORMATION: N stands for any nucleotide.
    B1 <220> FEATURE:
    82 <221> NAMB/KEY: misc_feature
    83 <222> LOCATION: (723)
    84 <223> OTHER INFORMATION: N stands for any nucleotide.
    86 <400> SEQUENCE: 1
    87 gategegtaa aeggtgtaac aeggaaagca attgtttaat gteggcaaaa tgeageeetg 60
    88 tggtcggtte gtccagaata tacagggttt tgcccgtatc ccgtttggag agttccgtcg 120
    89 ccagtttcac ccgttgcgct tccccgccgg acagggtggt agaggattgc cccaagcgaa 180
    90 tataagacaa geccaegtea ateagggttt geaatttaeg egeaateatt ggaatggeat 240
     91 eganaanete gegegeatet tecacegtea tgtecageae etgatgaatg gittiacett 300
     92 tgtageggat ttccagggtt tegegattgt aacgettgcc tttacattgg tegeaaggea 360
     93 ogtacacate gggcaggaag tgcatttcca ctttgattac geegtegeec tggcaggett 420
     94 acagegeerg cogegeacgt taaaactgaa acgeeeeggg ttataacege gegeacggge 480
     95 tttcggtncg ccggcanaca attcgcgaat cggcgtgaat acgcccgtgt aagttgcccg 540
W--> 96 gttggagegt ggegtgegte caatengget ttggttaata teaataettt ategaaaaat 600
     97 tocaaacett taatggactt gtacngngaa acctongoat tttotgoacn attaangogt 660
     98 nttgtgcaat anggaacasa ntgtcgttas tcagtgtaga atttacctta accggacacn 720
     99 congtgatge aggtaaataa geecaeggga atgtetaaat tgaegttttt eaggttgtta 780
     100 ccggaagege cgaacaattt gageattttt ttettateaa gtgcggtacg ttttttcggt 840
     101 atttegate
     104 <210> SEQ ID NO: 2
     105 <211> LENGTH: 357
     106 <212> TYPE: DNA
     107 <213> ORGANISM: Actinobacillus actinomycetemcomitans
     109 <400> SEQUENCE: 2
     110 gatcactaag ttgttczatc ctttcgcttg ggaatctttg tctaaatacg gtttatgttg 60
     111 cattgogtta acgictaaat caccittaga cactgoagtg titggcaagg cgtagicatg 120
     112 aataaaacgt attotacgtc taagttgtat ttttcttttg ccactttcgc tgcgatttca 180
     113 gecacttqqt qttccqqtcc tqccatcacg cccactttga ttgttgccgg ggcttctgcc 240
     114 geoggttigt etgeoggtge ggetteoggt titttetett cattacaage cogttaagge 300
    115 gaatacggag gctaatgttg cgacgcctaa taatttttt caagttcata aaagatc
     118 <210> SEO ID NO: 3
     119 <211> LENGTH: 886
```

RAW SEQUENCE LISTING DATE: 01/18/2006 PATENT APPLICATION: US/09/980,845A TIME: 15:36:00

Input Set : A:\seqlistcorrected.2002.06.21.txt
Output Set: N:\CRP4\01182006\I980845A.raw

```
120 <212> TYPE: DNA
    121 <213> ORGANISM: Actinobacillus actinomycetemcomitano
    123 <220> FEATURE:
    124 <221> NAME/KEY: misc_feature
    125 <222> LOCATION: (554)
    126 <223> OTHER INFORMATION: N stands for any nucleotide.
    128 <220> FEATURE:
    129 <221> NAME/KBY: misc feature
    130 <222> LOCATION: (596)
    131 <223> OTHER INFORMATION: N stands for any nucleotide.
    133 <400> SEQUENCE: 3
    134 gatcaaactg gtggcgcaag ggcagcgcgt agcaaattta cccgatattt tggtctatgc 60
    135 gcgcgtcggc aacggcatgg tagggcgacg ccgtggttta aaccaagcca aagcggaatg 120
     136 gegettattt aagetaaaac accatettgg cattcaggga tttttateeg ggetatteac 180
     137 ttttgtcctg cgttccggtg ccagattatt gccgacatca ttactgaaaa acatctatca 240
     138 aaccttttta agaanataac atgatgasat taaactgtat tttaaasata tccggaattt 300
    139 ccaccgcact ttttctagcg ggttgttcct caaattcaag tgcgccgacg caatcctctg 360
     140 agcaggcgaa ttctgttacg gctgtgaatc ccactgcggt gtacagtaag ccccgcactt 420
     141 tggataactt caacgattat gtgaatttct taaaaggtaa agcagcggca gaaggcgttt 480
     142 ctgccgacgt attgaatgca cassatasts ttsattatat tcsassatcc gtggatttgg 540
W--> 143 acgatcaaca agenggenga attegenage gtgatecana tgeccegeeg atdatmantt 600
     144 ccgaacggca cgaccaatta cttaaatcgt gtattaacca agaataaagt agacacggca 660
     145 gaagcacgtt attgggaaca attgccgcag cttgaaaatg cttcaaagaa attcagcgta 720
     146 cegaaaaatt atetgttage ettgtgggge atggagagta getttggeta ttatcaggge 780
     147 aattacgatg tgttatccac cttagccact cttgcttttg acggacgccg tgaagcctta 840
     148 ttcagcaaag aattcatcgc cgccatgaaa atgctacagc gcgatc
                                                                           886
     151 <210> SEQ ID NO: 4
     152 <211> LENGTH: 507
     153 <212> TYPE: DNA
     154 <213> ORGANISM: Actinobacillus actinomycetemcomitans
     156 <220> FEATURE:
     157 <221> NAME/KBY: misc_feature
     158 <222> LOCATION: (4)
     159 <223> OTHER INFORMATION: N stands for any nucleotide.
     161 <220> FEATURE:
     162 <221> NAME/KBY: misc_feature
     163 <222> LOCATION: (9)
     164 <223> OTHER INFORMATION: N stands for any nucleotide.
     166 <220> PEATURE:
     167 <221> NAME/KBY: misc_feature
     168 <222> LOCATION: (21)
     169 <223> OTHER INFORMATION: N stands for any nucleotide.
     171 <220> FEATURE:
     172 <221> NAME/KEY: misc_feature
     173 <222> LOCATION: (23)
     174 <223> OTHER INFORMATION: N stands for any nucleotide.
     176 <220> FEATURE:
     177 <221> NAME/KSY: misc_feature
     178 <222> LOCATION: (29)
```

RAW SEQUENCE LISTING DATE: 01/18/2006
PATENT APPLICATION: US/09/980.845A TIME: 15:36:00

Input Set: A:\seqlistcorrected.2002.06.21.txt
Output Set: N:\CRP4\01182006\1980845A.raw

```
179 <223> OTHER INFORMATION: N stands for any nucleotide.
181 <220> FEATURE:
182 <221> NAME/KEY: misc_feature
183 <222> LOCATION: (32)
184 <223> OTHER INFORMATION: N stands for any nucleotide.
186 <220> FEATURE:
187 <221> NAME/KEY: misc_feature
188 <222> LOCATION: (35) .. (36)
189 <223> OTHER INFORMATION: N stands for any nucleotide.
191 <220> FEATURE:
192 <221> NAME/KEY: misc_feature
193 <222> LOCATION: (39)
194 <223> OTHER INFORMATION: N stands for any nucleotide.
196 <220> FEATURE:
197 <221> NAME/KEY: misc_feature
198 <222> LOCATION: (42)
199 <223> OTHER INFORMATION: N stands for any nucleotide.
201 <220> FEATURE:
202 <221> NAME/KEY: misc_feature
203 <222> LOCATION: (45)
204 <223> OTHER INFORMATION: N stands for any nucleotide.
206 <220> PEATURE:
207 <221> NAME/KEY: misc_feature
208 <222> LOCATION: (49)
209 <223> OTHER INFORMATION: N stands for any nucleotide.
211 <220> FEATURE:
212 <221> NAME/KEY: misc_feature
213 <222> LOCATION: (52)
214 <223> OTHER INFORMATION: N stands for any nucleotide.
216 <220> FEATURE:
217 <221> NAME/KEY: misc_feature
218 <222> LOCATION: (58)
219 <223> OTHER INFORMATION: N stands for any nucleotide.
221 <220> FEATURE:
222 <221> NAMB/KEY: misc_feature
223 <222> LOCATION: (61)..(62)
224 <223> OTHER INFORMATION: N stands for any nucleotide.
226 <220> PEATURE:
227 <221> NAME/KEY: misc_feature
228 <222> LOCATION: (65)
229 <223> OTHER INFORMATION: N stands for any nucleotide.
231 <220> PEATURE:
232 <221> NAME/KEY: misc_feature
233 <222> LOCATION: (69)
234 <223> OTHER INFORMATION: N stands for any nucleotide.
236 <220> FEATURE:
237 <221> NAME/KEY: misc_feature
238 <222> LOCATION: (73)
239 <223> OTHER INFORMATION: N stands for any polynucleotide.
```

RAW SEQUENCE LISTING DATE: 01/18/2006
PATENT APPLICATION: U5/09/980,845A TIME: 15:36:00

Input Set : A:\seqlistcorrected.2002.06.21.txt
Output Set: N:\CRP4\01182006\1980845A.raw

```
241 <220> FEATURE:
    242 <221> NAME/KEY: misc_feature
    243 <222> LOCATION: (97)
    244 <223> OTHER INFORMATION: N stands for any nucleotide.
    246 <220> FEATURE:
    247 <221> NAME/KEY: misc_feature
    248 <222> LOCATION: (102)
    249 <223> OTHER INFORMATION: N stands for any nucleotide.
    251 <220> PEATURE:
    252 <221> NAME/KEY: misc_feature
    253 <222> LOCATION: (138)
    254 <223> OTHER INFORMATION: N stands for any nucleotide.
    256 <220> PEATURE:
    257 <221> NAME/KEY: misc_feature
    258 <222> LOCATION: (457)
    259 <223> OTHER INFORMATION: N stands for any nucleotide.
    261 <220> FEATURE:
    262 <221> NAME/KEY: misc feature
    263 <222> LOCATION: (459)
    264 <223> OTHER INFORMATION: N stands for any nucleotide.
     266 <220> FEATURB:
     267 <221> NAME/KEY: misc_feature
     268 <222> LOCATION: (467)
     269 <223> OTHER INFORMATION: N stands for any nucleotide.
     271 <400> SEQUENCE: 4
W--> 272 ttgntacent ageogetgae nanaactane angenntgna tnatntegna tnattaanat 60
     273 nngcnaggng cancagetta cetttgeega eggttenetg tntgaaageg ecattegeaa 120
     274 agtgccggtg gaggcggnga aaattcactc acttggtgcg gaaggcaatg atgtgggatt 180
     275 gaaageceat catggegggt ggataaageg ttatttttta tgteggeaga tgeettteet 240
     276 gegttaaatg egttattaga egaaaatttt tegtateagg acacageagt ttacggegag 300
     277 aattitgtgg titccgcgct gaatgaagat tccgtgtgtg tgggcgatat ttatcaaatc 360
     278 ggctcctgcg tggtggaggt gtcgcagccg cgtaaacett gtgagcgctt atcgaaaaat 420
     279 accastaste egascaeges acasacegts taegetneng etggtengge tggtatgtge 480
     280 cggtggtacc ccaaggggga aattcaa
     283 <210> SEQ ID NO: 5
     284 <211> LENGTH: 1087
     285 <212> TYPE: DNA
     286 <213> ORGANISM: Actinobacillus actinomycetemcomitans
     288 <220> PEATURE:
     289 <221> NAME/KBY: misc_feature
     290 <222> LOCATION: (622)
     291 <223> OTHER INFORMATION: N stands for any nucleotide.
     293 <220> FEATURE:
     294 <221> NAME/KEY: misc_feature
     295 <222> LOCATION: (642)
     295 <223> OTHER INFORMATION: N stands for any nucleotide.
     298 <220> FEATURE:
     299 <221> NAME/KEY: misc_feature /
     300 <222> LOCATION: (661)
```

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 01/18/2006 PATENT APPLICATION: US/09/980,845A TIME: 15:36:01

Input Set : A:\seqlistcorrected.2002.05.21.txt
Output Set: N:\CRP4\01182005\1980845A.raw

Please Note:

Use of n and/or Xmm have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xmm.

Seq#:1; N Pos. 566,625,627,636,650,656,661,672,681,720,723 / Seq#:3; N Pos. 554,596 / Seq#:4; N Pos. 4,6,21,23,29,32,35,36,39,42,45,49,52,58,61,62,65,69,73,97 / Seq#:4; N Pos. 102,138,457,459,467 / Seq#:5; N Pos. 622,642,661,669,685,690,700 / Seq#:6; N Pos. 609,614,651,665 / Seq#:7; N Pos. 532,630,696,710,722,725 / Seq#:8; N Pos. 538 / Seq#:12; N Pos. 131,151,170,178,194,199,209 / Seq#:18; Xaa Pos. 43,50,59,66,69

VERIFICATION SUMMARY DATE: 01/18/2006
PATENT APPLICATION: U8/09/980,845% TIME: 15:36:01

Input Set : A:\seqlistcorrected.2002.06.21.txt
Output Set: N:\CRF4\01182006\1980845A.raw

L:13 M:270 C: Current Application Number differs, Replaced Application Number L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date L:96 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:540 M:341 Repeated in SeqNo=1 L:143 M:341 W: {46} "n" or "Xaa" used, for SEQ ID#:3 after pos.:540 L:272 M:341 W: {46} "n" or "Xaa" used, for SEQ ID#:4 after pos.:0 M:341 Repeated in SeqNo=4 L:334 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:600 M:341 Repeated in SegNo=5 L:381 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:600 M:341 Repeated in SeqNo=6 L:429 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:480 M:341 Repeated in SeqNo=7 L:456 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:480 L:551 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:120 M:341 Repeated in SegNo=12 L:709 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:32 M:341 Repeated in SeqNo=18

- ~0+ - ++ -



Case No.: 00-505-B

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Microbial Polynucleotides Expressed During Infection of a Host

the specification of which is attached hereto unless the following space is checked:

was filed on November 15, 2001 as United States Application Serial Number 09/980,845.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s):

Number Country Day/Month/Year Filed
1. US00/21340 PCT August 4, 2000

2.

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

Application Number Filing Date
1. 60/147,551 August 6, 1999

2.

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application Number Filing Date Status: patented, pending, abandoned

1. 2.

I hereby appoint the practitioners associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and I direct that all correspondence be addressed to that Customer Number.

Customer Number: 020306

Principal attorney or agent: Lisa M.W. Hillman

Telephone number: 312-913-0001

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor

Ann Progulske-Fox

Inventor's signature:

6392 Country Rad 214 S., Keystone Heights, Florida 32656

Residence:

Citizenship:

United States of America

Post Office Address:

6392 Country Road 214 S., Keystone Heights, Florida 32656

Full name of second joint inventor. Martin Handfield

Inventor's signature:

Residence:
Citizenship:

Date:

10155 SW 52nd Road, Gainesville, Florida 32608

Canada

Full name of third joint inventor: Jeannine L. Bradley

Inventor's signature:

Residence: Citizenship:

Post Office Address:

13214 NW County Road 231, Gainesville Florida 32609 United States of America 13214 NW County Road 231, Gainesville, Florida 32609

Full name of fourth joint inventor: Jeffrey D. Hillman

Date: 3/11/0 2
6424 SW 26th Place, Gainesville, Florida 32608
United States of America Inventor's signature: Residence:

Citizenship:

United States of America 6424 SW 26th Place, Gainesville, Florida 32608 Post Office Address:



IN THE UNITED	(Case No.00-505-B)
In the Application of:)
Progulske-Fox) Art Group: Not assigned
Serial No.: 09/980,845)) Examiner: Not assigned
Filed: August 4, 2000)
For: Microbial Polynucleo During Infection of a	· · · · · · · · · · · · · · · · · · ·
Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	
Sir:	TRANSMITTAL LETTER
	ained herein "00-505 ST25" submitted under 37 C.F.R.§1.52(e):
Ontains the file "	M-PC Machines MS-Windows Operating System 0-505 ST25" which is 26,624 as created on 03/16/2006.
submitted herein, titled "00-5	R. § 1.52(e)(4): The undersigned certifies that the original CD-R of ST25" (COPY 2) and the copy CD-R entitled "00-505 ST25" (C.F.R. § 1.52(e)(4). Respectfully submitted,
	McDonnell Boehnen Hulbert & Berghoff LLP
Dated: March 16, 2006	By: Alsh

Reg. No. 43,673

McDonnell Boehnen Hulbert & Berghoff LLP 300 South Wacker Drive 32nd Floor

Chicago, Illinois 60c06 Phone. 312-913-0001 Fax: 312-913-0002